Hygeia

THE HEALTH MAGAZINE

High Blood Pressure

Children's Headaches

Executive's Health in Industry

Sex Determination

September 1946 25¢

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

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Are Better Babies"

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Hygeia
THE HEALTH MAGAZINE

Published by the American Medical Association
535 N. Dearborn St., Chicago 10, Ill.
Edited by MORRIS FISHBEIN, M.D.

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WHO'S WHO in Hygeia

Collaborators

IRVINE H. PAGE, M.D., co-author with A. C. CORCORAN, M.D., of the article on "High Blood Pressure," received his medical degree at Cornell University Medical School and interned at the Presbyterian and Bellevue Hospitals in New York. After spending four years in the Kaiser Wilhelm Institute at Munich, he returned to New York and became an associate member of the Rockefeller Institute. For seven years he was director of the Lilly Laboratory for Clinical Research and, since January 1945, has been director of research for the Cleveland Clinic Foundation. Dr. Page is the author of three books, one of which was written in collaboration with Dr. Corcoran.

Dr. Corcoran received his M.D. from McGill University Faculty of Medicine in Montreal and interned at the Montreal General Hospital. While on the staff of the Rockefeller Institute Hospital, he became associated with Dr. Page and the two have been working together ever since. Dr. Corcoran's main professional interests lie in the physiology and pathology of high blood pressure and kidney disease.

Canadian Author

Another graduate of McGill University Faculty of Medicine is ALTON GOLDBLOOM, M.D., whose article in this month's HYGEIA is on the subject of "Children's Headaches." Dr. Goldbloom is at present chairman of the department of pediatrics at McGill and is also acting physician-in-chief of the Children's Memorial Hospital, chief of pediatrics at the Jewish General Hospital, as well as consulting pediatrican to the Shriners Hospital (all of these in Montreal). Dr. Goldbloom has published fifty-five articles on children's diseases, and he is also the author of a book on child care which has gone through four English and three French editions.

Professor—Naturalist

For twenty-three years professor and head of the department of zoology of Oregon State College, NATHAN FASTEN, Ph.D., is now chief biologist and chief of technical division of the State of Washington Pollution Control Commission. Dr. Fasten was born in Austria, but came to the United States when he was 2 years

Skin trouble in women *and* men

"If your skin tends to break out, swell, itch, or become easily infected, it may be a warning sign of more serious disease. The important thing is to give skin symptoms the same prompt attention as a damaged heart or any other physical disorder. With some 400 different skin conditions, many of which look almost alike, and some catching, it is dangerous to try and diagnose your own case. Treated properly your symptoms may clear up quickly and leave your skin a health asset—unblemished, attractive, well!"

Your doctor

Painted by Alexander James

What to do if you have a skin disorder

1. *See your doctor*—This is especially important with any stubborn sore that has not healed in two weeks. It may prove serious even though it looks slight.

2. *Do not experiment* with some ointment or lotion just because it helped a friend. Many people make a simple skin disorder worse by the wrong treatment.

3. *Give your doctor time enough to help you*—Some skin conditions take a while to clear up. Have patience. Follow your doctor's instructions faithfully. He will help you to the healthy skin which reflects a healthy body.

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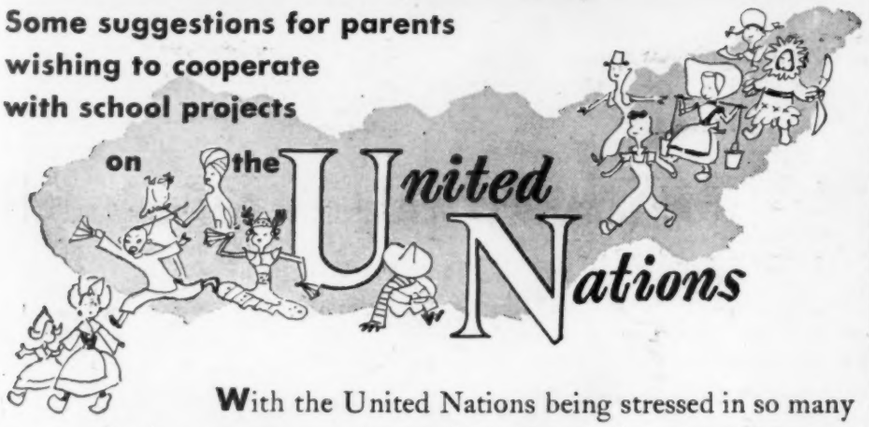
Helpful Modern Points of View

Presented with the hope this will be interesting and helpful to you

Some suggestions for parents wishing to cooperate with school projects on the United Nations



With the United Nations being stressed in so many schools now, you may be on the look-out for ways to keep up with and supplement the children's home work, as well as ways to learn more about this vitally new subject yourself. Here are three "projects" that both you and your children may enjoy . . .

Special Radio Broadcasts. On-the-spot reporting of the General Assembly meetings, plus a number of other United Nations radio features, might prove ideally adapted for family listening groups.

Scrapbooks. Compiling some of the many pictures and articles illustrating the customs of other nations — the ways other children live, etc.— might be of particular interest to the children.

U. N. Charter. Copies are available, and as well as giving you a basis for discussion, the children might enjoy owning one for its historical interest.

• • • •

These suggestions are from Dr. Belmont Farley, Director of Press and Radio Relations, National Education Association.

For a free copy of the Charter, *just write to the Division of Research and Publication, U. S. Department of State, Washington 25, D. C.*

For further information, if interested, just contact your local civic organizations. Many have made extensive plans to supply general information, guest speakers to interested groups, etc.

We hope that the foregoing is helpful to you just as millions of people have found chewing Wrigley's Spearmint Gum helpful to them.

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old. He received his bachelor of science degree from the College of the City of New York and his doctor's degree from the University of Wisconsin, where he did graduate study in zoology, plant physiology, parasitology, cytology, genetics and evolution. In addition to his academic work, Dr. Fasten spent many summers acting as a special investigator for the Washington, Wisconsin and Oregon Fish Commissions, and three summers in charge of invertebrate zoology at the Puget Sound Biological Station. He is also a fellow of the American Association for the Advancement of Science and a member of the American Society of Zoologists.

Accidental Career

MARILYN HANCOCK, author of the article on the Hospital Saturday and Sunday Association, is a newspaperwoman—by accident. Miss Hancock took over her father's insurance business when he went into military service, and the business, as she puts it succinctly, "went to pot." When offered a job on her home town weekly, she took the post. Her second journalistic venture was editing a Chicago suburban weekly. Miss Hancock is now on the staff of the Denver *Rocky Mountain News*. She tells us that she discovered the Saturday Association story when off the regular beaten track for the city desk.

Industrial Physician

For the past twenty-five years, T. LYLE HAZLETT, M.D., has been medical director of the Westinghouse Electric Corporation. Before going to Westinghouse, and immediately following his graduation from the University of Pittsburgh School of Medicine, he worked with the American Red Cross Service in Russia (1914 to 1916) and then spent two years in the United States Army Medical Corps.

Indian Writer

Indians and writing have, since her childhood, been EDITHA L. WATSON'S greatest interests, and she has managed to combine them with considerable success, first as an avocation and later as a profession. Editor and owner of a law weekly for a while Miss Watson followed the newspaper profession for a number of years. A little over a year ago she joined the staff of the Office of Indian Affairs.

Discharged Dermatologist

Recently discharged from the Medical Corps with the rank of major, EVERETT T. DUNCAN, M.D., is a Chicago dermatologist. He was graduated from Tulane University Medical School and specialized in diseases of the skin at the New York Skin and Cancer Unit.

Yes, Junior—all that research for you and the millions of other people who look upon Ivory as the standard of purity and mildness in soaps.

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She lets us *eat* our milk, too!"

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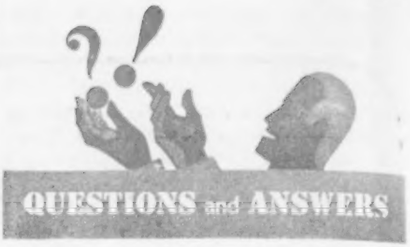


Subtilin and TB

To the Editor:—I read an article about a bacillus extract known as subtilin which would kill tuberculosis bacilli. I have a sister who contracted tuberculosis approximately eight years ago. Everything has been done to combat this disease in her but she is growing steadily worse. Can you inform me if there has been any progress made in the study of subtilin.

Maryland.

Answer.—Our understanding is that research is still being carried out with the substance discussed in your letter. We do not believe that any scientific evidence has been obtained regarding its effectiveness against tuberculosis. With modern methods of treatment, the outlook for most tuberculous patients is much more hopeful. We do not know what form of treatment your sister has but presume that all measures applicable in her case have been utilized. Hospitalization sometimes is indicated in the more serious cases. We cannot suggest anything specific, for we do not know your sister's condition.

Life Span

To the Editor:—Why should I, a mother at the age of 36, have 36 more years to live, giving me a life expectancy span of 72 years, while my daughter, whose age is 10, has 59 more years, bringing her life span to 69. Does not the life span increase with each generation?

Ohio.

Answer.—The reason for the discrepancy in your figures is that as one grows older one automatically enters a more favorable life expectancy classification. In the case of your daughter, not as long a life span can be assured because she is still subject to childhood diseases, such as rheumatic fever or diphtheria, which might prove fatal or cause such damage to the body that the life span would be shortened. You have passed beyond the age at which such diseases occur and have a better chance of living slightly longer.

About Athletics

To the Editor:—Can you give me an opinion as to the age level at which competitive athletics should be introduced in schools?

Kentucky.

Answer.—The feeling is gradually developing that competitive athletics

should be kept at a minimum in grammar school children. There is no objection to introducing various games such as baseball, basketball, football and hockey but the emphasis should be on the play aspects rather than competition. Periods should be shortened, and in track events distance running and long sprints should be omitted.

The result of medical experience indicates that unless considerable restraint is exercised there is a possibility that overindulgence may occur and interfere with normal body development.

Patent Medicines

To the Editor:—I would like some information regarding patent medicines for colds. Minnesota.

Answer.—Patent medicines cannot be considered of value. Obviously, a medicine with a fixed formula cannot be expected to prove satisfactory for every individual.

Medical research is still seeking a satisfactory treatment for the common cold. Patent medicines recommended for this are worthless. Some may check secretions, or relieve headaches, but they do nothing to correct the basic trouble and may even mask serious symptoms.

Coal Dust

To the Editor:—I have a friend who has asthma from coal dust. He has had x-rays made and the doctor told him it's not too bad. Is there any help for this case? Can it be checked? I have heard of cases where things are removed from lungs such as pins, etc. Could the same be done to remove coal dust a little at a time?

Pennsylvania.

Answer.—Further development of the condition in your friend's lung can be averted only by giving up that type of work. There is no satisfactory method by which the accumulation of coal dust can be removed once it is deposited in the lungs. The process suggested by you, whereby foreign bodies such as pins, needles and buttons are removed from the lungs, would not be practical. It would not be possible to remove the coal dust particle by particle.

Sprain Treatment

To the Editor:—I've sprained both ankles at different times and have had so much trouble since. They ache and swell. The first time the doctor said the modern way to treat it was to bind it and keep it active. I have gone to other doctors who say it should be bound again. Have been to a chiropodist. He said I would always have trouble because I wasn't off of it when I sprained it. I would like to know the correct answer.

Illinois.

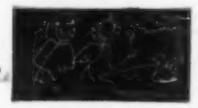
Answer.—Recent treatment of sprains does involve the use of the

It pays to know when to relax!

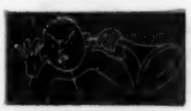
If you set too fast a pace in work or play... worry too much... or often get upset emotionally, you waste your energy and *fatigue* sets in.

Conserve your energy by avoiding such conditions. Store up *more* energy by getting enough sleep, food,

rest, and fresh air.

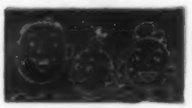


If you are *continuoisly* tired or listless, see your doctor! It may be an early sign of a serious ailment or an infection, or be due to poor eyesight, hearing,



or posture.

You can usually avoid harmful fatigue if you'll *remember to relax!*



Metropolitan's free booklet—"Fatigue . . . What To Do About That 'Tired Feeling'"—contains many helpful suggestions on how to relax and keep fit. Write today for booklet 96-Z

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Acrobat

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injured part as early as possible. In certain instances, anesthetic material is injected into the area so that pain will not preclude such activity.

From your description it appears that you are suffering from more than ankle sprains. As a matter of fact, the sprains may have been secondary to some extremely significant underlying condition. It is suggested that you ask your local physician to refer you to a specialist in internal medicine or in diseases of the joints, known as an orthopedic physician.

Discusses Rheumatic Fever

To the Editor:—When the cause of rheumatic fever is found and removed, is the patient cured of this disease? Is there such a thing as a slight case of rheumatic fever?

New Jersey.

Answer.—If the responsible agent for rheumatic fever is eradicated, the patient can be considered to be recovered. Many patients have a tendency to suffer relapses, however, and must be followed medically for several years. Rheumatic fever often causes serious and permanent damage to the heart. Any individual who has suffered such damage may have to lead a somewhat restricted life. In certain instances, what might be described as a "slight case" of rheumatic fever is encountered. In such individuals, no serious damage may result and their good health is not diminished.

Superfluous Hair

To the Editor:—I am asking your aid to find a way by which body hair can be removed. This is not an unwarranted request—the long dark hair covers my neck, chest, arms, abdomen and legs, and has been so since the age of 19. This growth has made social sports and other affairs where a full shirt and trousers are not in order embarrassing to the point of omission.

California.

Answer.—We believe you are developing too much concern over a relatively unimportant matter. You should attempt to adjust yourself to acceptance of this condition. No doubt you are aware of the generally accepted belief that it is proof of unusual virility. There is no reason you should feel this makes you a social outcast.

It is true that the use of x-rays will result in loss of hair. This is attended by considerable risk. Permanent damage may be done to the skin. There may even be development of cancer as a result of extensive use of x-rays. There is no objection to shaving the hair, or keeping it within reasonable limits by a clipper or electric razor. Such measures need not be repeated more than once every two weeks. We advise you strongly against the use of internal medication, and also against the use of x-rays.

LETTERS from the Readers

Jewelry from Shells

To the Editor:

Since collecting shells has been a family hobby for years, my attention went immediately to Dr. Merrill Moore's article on conchology in the July HYGEIA. I should like to call Dr. Moore's attention to a fourth thing to do with shells—also with therapeutic value.

Your favorite shells or a combination of shells lend themselves nicely to the construction of artistic pieces of jewelry. A bit of plastic foundation and some household cement handled patiently by a fertile imagination will create treasures admired by many. Thousands of people have tried their hands at it. In moderation, I strongly recommend it. F. MABEL BUCKS, R.N.

Reading, Pa.

Forty for Fifteen

To the Editor:

We take HYGEIA through the school library, but one copy is insufficient. Our health class (forty pupils) wishes to use HYGEIA for classroom work. Can you give me a special six month subscription rate for forty pupils?

SISTER MARY LOURDES
VINCENTIAN INSTITUTE

Albany, N. Y.

NOTE.—HYGEIA'S *Student Group Plan allows a discount of 40 per cent when ten or more copies are sent to one address. This is at the rate of 15 cents a copy, and includes a free teacher's copy and choice of any term desired.*—ED.

About Chiropractic

To the Editor:

Your article entitled "Can Chiropractic Cure?" was an excellent exposure of this cult. Keep up your courageous battle against these charlatans. ROBERT WILEY

Miami, Fla.

To the Editor:

I am very much interested in your article, "Can Chiropactic Cure?" since I had a sister who passed away several weeks ago because of an incurable kidney condition and diabetes. She, also, was a victim of the chiropractors, who claimed they could cure her until it was too late for medical attention. IDA MERETO

St. Louis, Mo.

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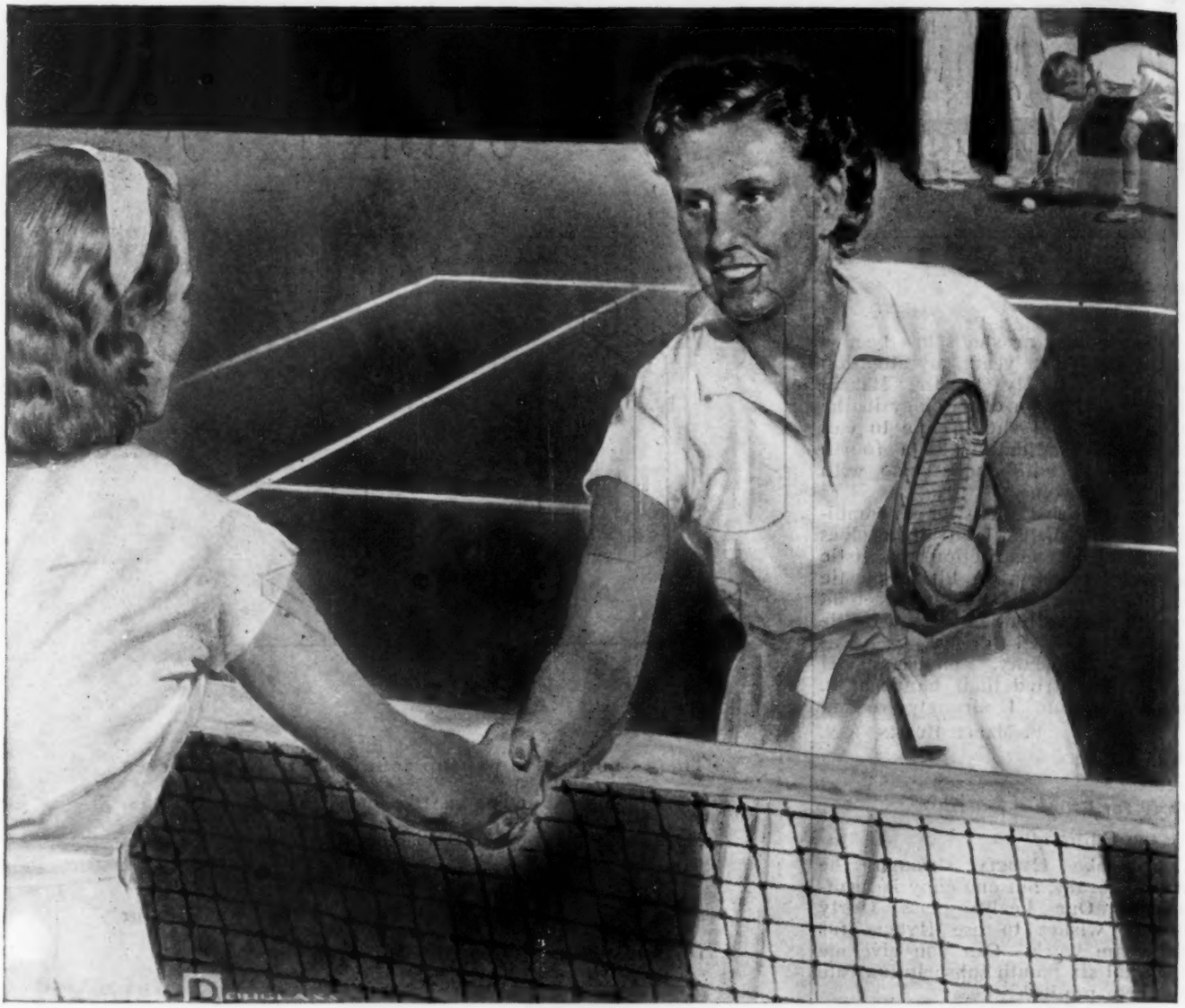

She conquered CANCER too

TODAY MOST cases are curable—if caught in time! The important thing is early diagnosis—to control the cancer before it grows and spreads.

Great scientists have dedicated themselves to overcoming this dark enemy, which takes one life out of every nine. Statistics now show a rising curve of hope. Much of the credit for this goes to organizations such as the *American Cancer Society*, which have labored so hard in educating people to see a physician regularly—without waiting for trouble. They are working for you, and for your family.

Wyeth of Philadelphia, a pioneer in medicines, pays tribute to these scientists and these societies. They have saved many. They have given Hope to all.

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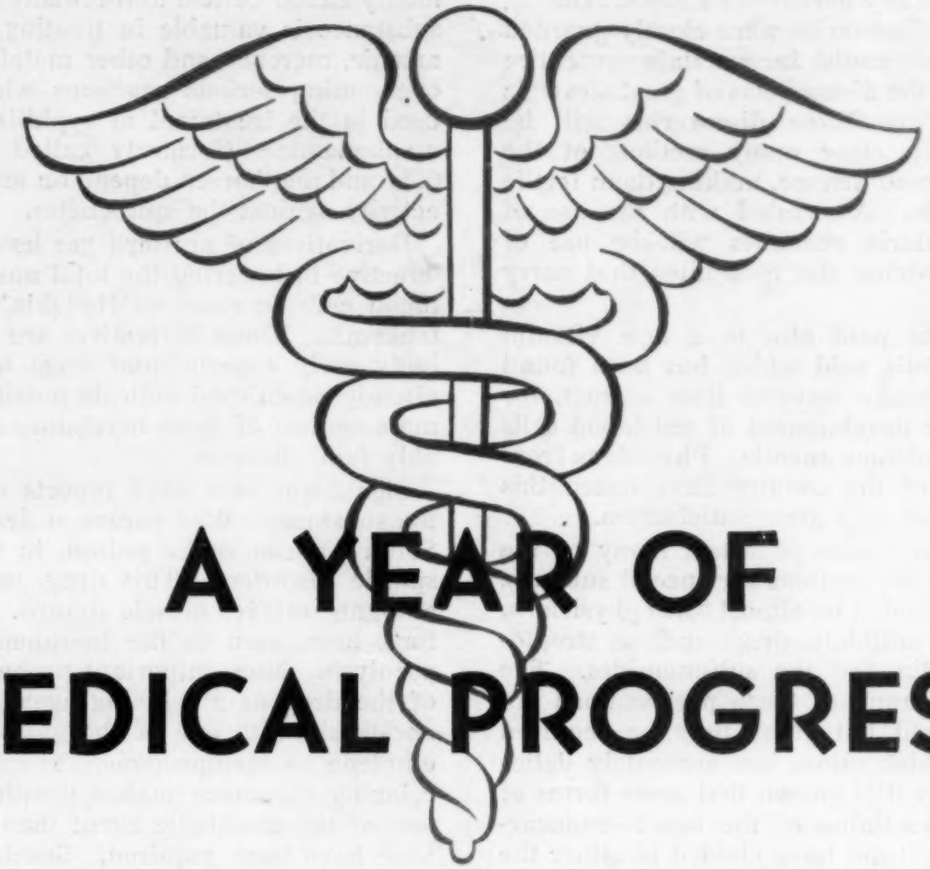


A YEAR OF MEDICAL PROGRESS

An Editorial by **MORRIS FISHBEIN**

THE Annual Session of the American Medical Association gives opportunity to physicians throughout the nation to present to their colleagues records of advances made in the prevention, diagnosis and treatment of disease. At the session held in San Francisco early in July, hundreds of papers were read and they brought to light many discoveries of great interest and usefulness.

Whenever a great discovery is made in any field of science, investigators try immediately to find out whether or not it is applicable in any way for the improvement of health. Thus the studies that led toward the development of the atomic bomb turned the attention of medical investigators toward the possibilities of atomic energy and radioactivity. As a result, it was found possible to make elements radioactive. These elements are then injected into the human body. They are carried by the blood directly to certain organs which seem to have a special affinity for those elements. The radioactivity goes along and acts on the cells of the organs concerned. These substances are called radioactive isotopes. Now radioactive iodine is being used to treat excessive action of the thyroid gland, radioactive phosphorus for excessive numbers of white blood cells and red blood cells, and other radioactive elements to attack growths in various organs of the body. Furthermore, instruments have been developed which can trace the passage of these isotopes through the body so that it becomes possible to determine the time of circulation and whether or not there are any impediments to free circulation of the blood.

The work on blood and its derivatives, which has been considered one of the greatest medical developments of the war, has led now to the possibility that substances may be found in the blood capable of controlling hemophilia, the hereditary bleeding disease that caused the deaths of the heirs to the thrones of Russia and Spain. Other derivatives of the blood are being used to overcome loss of protein through the kidney in nephrosis and to prepare patients suitably for operation and to improve their nutrition after operation.

During the war thousands of preparations were tested as to their effects on malaria. Out of these studies have come several new preparations which are believed to be more effective

in malaria than any heretofore known. During the war these discoveries were closely guarded because malaria could incapacitate an entire army and thus the disease was of great strategic importance. Now these discoveries will be applied to help clear many sections of the earth of this dread disease, making them fertile and inhabitable. Associated with the use of these new malaria remedies will be use of DDT for destroying the mosquitos that carry malaria.

Attention was paid also to a new vitamin factor called folic acid which has been found equivalent in many ways to liver extract, for stimulating the development of red blood cells in cases of pernicious anemia. Physicians from various parts of the country have tested this new preparation with great satisfaction.

As might have been expected, many of the papers read in the sections for special subjects, which were attended by almost 8,000 physicians, dealt with the antibiotic drugs such as streptomycin, penicillin and the sulfonamides. The limitations of many of these preparations are being recognized but years may be required before their chief values are accurately delineated. Already it is known that some forms of infection of the lining of the heart—endocarditis—that might not have yielded to either the sulfonamides or penicillin may yield to streptomycin. Moreover, the other antibiotics seem to be without much virtue in tuberculosis but streptomycin seems to be effective at least in some forms of that disease, particularly in tuberculosis of the larynx. Cases of bronchiectasis with continuous discharge of infected material from the lungs yield in some instances to penicillin inhaled in the form of a vapor. Often because of the chronic character and the scarring resulting from bronchiectasis, it becomes necessary to combine surgical procedures with the use of the antibiotic drug. Together, however, these new methods offer hope in a condition formerly treated only with the greatest of difficulty.

Particularly important also is the effectiveness of penicillin in syphilis present in babies at birth.

The new remedy used in the treatment of epilepsy and other convulsive disorders, tridione, was discussed by several doctors. The drug has apparently useful activity for relieving pain as well as controlling convulsive seizures. Tridione seems to be specifically of value for the type of epilepsy called petit mal but in combination with other drugs it seems to be able also to reduce other forms of seizure affecting the brain and the motor activities of the body. The drug seems to be of less value in the severe form of epilepsy called grand mal.

The experiments with war gases led to the discovery of an anti-arsenical substance commonly called British anti-lewisite or BAL. This substance is valuable in treating poisoning by arsenic, mercury and other metals, and also in overcoming serious reactions when arsenic is used in the treatment of syphilis. Drugs like arsphenamine (formerly called salvarsan or 606) and mapharsen depend on arsenic for their activity against the spirochetes.

Derivatives of mustard gas have been found effective in lowering the total number of white blood cells in cases of Hodgkin's disease and leukemia. These derivatives are in an exceedingly early experimental stage but the effects already established indicate possibilities of ultimate control of these heretofore almost invariably fatal diseases.

Significant also were reports on the use of the substance called curare, a derivative of the South African snake poison, in the control of spastic disorders. This drug, used in proper amounts, relaxes muscle spasms. It has, therefore, been used in the treatment of infantile paralysis. More important probably is the use of the drug as a relaxing agent before giving anesthesia with one of the gases like ether or ethylene or cyclopropane. The use of such a relaxing substance makes possible the use of less of the anesthetic agent than would otherwise have been required. Specialists in anesthesia are now studying the effects of this substance on the tissues of the body generally so as to determine its maximum uses and any possible dangers that may be associated with its use.

In connection with the annual meeting of the American Medical Association great exhibits are offered so that doctors can see at first hand the experimental work that led to the discoveries and can hear demonstrations by men who did the work. This feature, which is known as the Scientific Exhibit, has come to be considered the greatest one-week postgraduate course in medicine available anywhere. This year the Army and Navy were able to present in their exhibits much of the magnificent work done during the war which made it possible for the American Army and Navy to show the lowest sickness and death rates ever to occur in a war. In fact, this great war seems to have been fought without a single major epidemic among our troops.

Next year the Annual Session of the American Medical Association will be held in Atlantic City. The American Medical Association was founded in 1847. The Atlantic City session is in celebration of the 100th anniversary. Here will be assembled the demonstrations and the records of 100 years of medical progress which will show physicians and the world generally that medicine has advanced more in the past 100 years than in all of the previous centuries of the life of man.

HEALTH

Our Most Cherished Possession

This essay, written by Noralee Benedict, a pupil in the Central High School in Kansas City, won a $100 war bond as a prize in the health essay contest sponsored by the Jackson County Medical Society, Kansas City, Mo.

The store was crowded with people standing at different counters. A small lady was speaking at counter one. "Could you find me an eye, a blue one to match the one I yet have?" "Certainly," answered the saleslady, wrapping it up. A man standing at a different counter spoke, "I'd like a new ear—about average size, please." "Yes, sir, here you are, sir." A fragile child at counter three asked wistfully, "May I have a new heart, please, miss, you see I've never been able to run or play." "Of course, little girl, we have one right here."

That would be the most frequented and beloved shop in the world—if it could really be. Unfortunately such a store is impossible, but there are people who can help us to keep from needing this store. They are doctors, nurses and scientists, working endlessly day after day to aid us in keeping our most precious possession, our health.

Let us count our blessings: a home, a family, sufficient money, adequate food, and our health; and the greatest of these is health.

What things do we enjoy most? A movie? We can't see movies without eyes. A beautiful theme of music? Without good ears we can't hear it. Painting? Without hands we can't paint. Hiking? Without legs we couldn't walk. Singing? If the throat is bad, singing isn't possible. Eating? Without a good stomach we can't enjoy our food. We soon find that these things are as nothing without health.

Health is an exacting taskmaster, though. When we abuse our eyes, as we too often do, they have ways of protesting. Headaches, tiredness, irritability and dizziness result. The doctor can help this; but wouldn't it be so much easier to take care of our eyes at the beginning?

Ears are important, although the way we sometimes treat them it doesn't seem that they are. Going without hats, catching colds, and not giving them regular cleaning will soon lead to poor hearing.

Many ills start from the common cold. Eyes, ears, throat, nose and stomach are affected by this one disease. Other diseases caused by it may destroy the use of our limbs, faculties and organs. Colds are brought only through carelessness and neglect. We have a precious possession in health. Why not guard it?

Our stomachs are delicate organs, but the way we often stuff them is certainly not respecting their delicacy. Then they begin to ache, which is only retribution after being mistreated. Our stomachs affect everything about us so let's treat them fairly.

It's fun to be healthy. Good times and good health can be happily "married." Any neglect would be an "alienation of affections"; and don't forget the lines from the ceremony that go like this, "to love, honor, and cherish, till death do them part."

Sex

By NATHAN FASTEN

A YOUNG married couple are expecting a baby and are wondering if it will be a boy or a girl. The mother is positive that she will give birth to a boy because she drinks a dose of bicarbonate of soda every day. She has read somewhere that boys develop in an alkaline environment, and girls in an acid environment. The father, on his part, prefers that his child be a girl, but, beyond wishful thinking, there is not much he can do about it.

Is there any truth to this expectant mother's belief? As far as science is concerned, there does not seem to be the slightest evidence that sex is determined through the medium of an alkaline or acid environment surrounding the developing organism. In reality, this theory is no better than the one held by the ancients, that inasmuch as the stars ruled the destinies of human individuals, sex also was determined through the influence of these luminous celestial bodies.

When the history of biology is reviewed it is astonishing to learn how little was known about sex and its determination prior to the present century. Most of the conceptions advocated that sex was initiated through some external stimulus that caused the organism to become either a male or a female. There existed some five hundred theories to account for sex determination. Most of these were in agreement with the views expressed by the two English biologists Geddes and Thomson, who in their book "The Evolution of Sex," published in 1889, asserted that "The factors that are influential in determining sex are numerous, and come into play at different periods. The constitution of the mother, the nutrition of the ova, the constitution of the father, the state of the male element when fertilization occurs, the embryonic nutrition, and even the larval environment in some cases, these and yet other factors have all to be considered."

But without going into a detailed examination of any of the above factors, it is safe to say that modern biology does not regard any of them of significant importance in sex determination. Since 1900 it has been fairly definitely established that sex must be looked upon as a genetic character, similar to many of the other traits of an individual, and like them, is largely determined by distinct entities brought in by the reproductive cells which unite to produce the new organism.

Before describing how sex is determined, it is necessary to familiarize oneself with a few of the important structures of the cells that constitute the tissues of an organism. In the final analysis, every living organism may be broken down into the smaller microscopic units known as cells. Each cell is characterized by a central nucleus composed mainly of a deeply staining material called chromatin. During cell

Determination

division, the chromatin becomes organized into chromosomes, bodies of definite shape and size, and these are believed to carry the hereditary determiners for traits, in the form of ultramicroscopic entities referred to as genes.

Two types of cells comprise an individual: first, somatic cells, which make up most of the bodily structures, and second, germ cells, which constitute the reproductive glands, either testes in the male, or ovaries in the female. The somatic cells have to do with the feeding, circulation, protection and responses of the organism. The germ cells, when mature, participate only in reproducing the new generation of offspring, and therefore, they are the ones considered to be of greatest significance in heredity.

It has been stated already that the chromosomes possess a characteristic size and shape. In some organisms, such as man, for instance, this individuality has progressed to the extent where each chromosome may be distinguished readily from every other one. Moreover, every animal or plant is further characterized by a definite number of chromosomes. Within the somatic cells, this number is usually twice that found in the germ cells. Technically, the biologist says that the somatic cells possess the diploid number of chromosomes, and the germ cells, the haploid number.

In producing a new organism, a male reproductive cell, the spermatozoon, unites with a female one, the ovum. This initial combination of germ cells is called a zygote, and by means of it, the diploid set of chromosomes is established. All cells formed by the developing zygote, both somatic and immature germ cells, possess the diploid set of chromosomes. The somatic cells retain this number through life, but the immature germ cells, when they undergo a process of transformation known as maturation, have it reduced from the diploid to the haploid set.

Prior to the present century, it was believed that the germ cells of a species were all alike as far as the number of chromosomes which they contained. Some investigators claimed to have found exceptions to this, but most biologists regarded their results with great suspicion. In 1902, however, Dr. Clarence E. McClung, the American biologist, working with the male germ cells of a common locust, established the fact that in one half of them there existed one more chromosome than in the other half. He then ventured the opinion that this extra chromosome might have something to do with the determination of sex. He inferred that the spermatozoon with the extra chromosome, designated as x, might be the male producing one, and the spermatozoon that lacked it, the female producing one. McClung had absolutely no proof of this, merely offering it as a random suggestion. However, it stimulated the late Dr. Edmund B. Wilson, one of the greatest of American biologists, to think along these lines. As a result, Dr. Wilson suc- *(Continued on page 682)*

DO YOU remember the day your boy or your neighbor's boy was classified 4-F by his draft board? He had bad teeth or tuberculosis that you had never suspected, or his feet would not stand tough marches, or his eyes were too poor to sight airplanes or aim a gun. Although you were glad he didn't have to go to war, did you wonder why no one had told you about these things earlier? Did you wonder whether even now something could be done to make him a healthier boy? How are the boys and girls now growing up and others still unborn going to live long and healthy lives?

Do not blame your family doctor. He has done remarkably well, often without proper community hospital and laboratory facilities, and often with small pay, considering his long and expensive years of training. You have probably never asked him nor has he been paid to keep you well or to see that your community has healthful conditions. The job of preventing illness, or at least of correcting environmental factors that encourage disease, has traditionally been given to the board of health or health department by your county or town authorities.

Perhaps you've never known that you have a health officer or a health department in your town or county. If you live in a small town of fewer than ten thousand or fewer than five thousand people, chances are that you don't have a health department, but have a health officer in name only.

What is the relation of a health department to your boy and those four million others rejected for military service? Many of them might have been rejected in any event, but a health department worthy of its name might have prevented the rejection of others. Such a department would either have its own system or cooperate with the school board in a system of school health service to discover poor vision, bad teeth and weak feet early enough to do something about them; would have facilities for periodic mass chest x-ray to detect the signs of tuberculosis when cure is relatively easy; would have nutrition and perhaps cooking classes to teach parents to obtain the maximum in balanced nutrition from the money spent for food; would have baby and preschool clinics to discover and correct remediable physical defects. In other words a properly organized and supported health department makes the climate in which good health is possible, and teaches you that poor health can be largely prevented.

Why then were your boy and the others rejected? There are many reasons. Among them is the fact that you and I and many of the approximately eighty million adults in the country have not learned about our local health departments—what they are and what they could be, if local jealousies, local indifferences or local stinginess didn't stand in the way.

The American Public Health Association is a voluntary association of people working in public health, just as the American Medical Association is an association of doctors and the National Education Association one of teachers. The American Public Health Association, inspired by a 1942 resolution of the American Medical Association calling for complete coverage of the nation by local fulltime modern health services, has for the past two years been trying to discover how you can have a local health department or make the one you have more effective.

It finds first that there are too many small local health departments to do effective work. There are nearly eighteen thousand cities, towns, villages and counties and about seventy thousand school boards in the country that are expected by law to help in health work. If these were evenly spread over the country it would mean one administrative unit for every one thousand six hundred persons. But, they aren't evenly spread and many do little about health.

Know your health department

How are the boys and girls now growing up and others still unborn going to live healthy lives and become able citizens?

By MARTHA LUGINBUHL

Many haven't enough money; most of them have for health officers either a family physician who is busy with his private practice, or some one who isn't even a doctor of medicine. In many instances the doctor hasn't had public health training, which is a specialty branch of medicine as are surgery or obstetrics. You wouldn't have an untrained doctor of surgery try to remove your appendix. You should insist that your health officer have public health training. Nor do many of the health departments have sufficient nurses or sanitary inspectors.

But can all of the eighteen thousand local government health units and each of the seventy thousand school boards have a fulltime doctor trained in public health, as well as nurses, sanitary inspectors and dentists? Of course not. When your village wants a highway it doesn't build it and then hope by some miracle that it will connect with the highways of other villages to complete a rounded highway system for business and recreational purposes. No, you voluntarily turn over either completely or partially your township or village right to build a road to the county or the state highway department, that in turn cooperates with the federal highway system in developing a network of highways that will serve local and through traffic.

In the same way local school boards cooperate to make consolidated school districts large enough to afford the facilities in teachers, buildings and equipment essential to modern progressive education.

It is important that you as citizens know that this same truth applies to public health matters —that independence of small units of government is of no value in itself unless that independence is used to cooperate with other units of government for a purpose.

The Committee of the American Public Health Association under the direction of Dr. Haven Emerson has made a proposal that all the villages, towns and cities in a county join with the county government in forming a local health department, that was approved by the American Medical Association. For the nearly three-quarters of the counties in the United States that have populations of less than fifty thousand it further suggests that two or more neighboring counties join together in forming a health unit made up of at least fifty thousand persons.

It does not believe that a population of much below fifty thousand persons can, without unnecessarily high taxation, support a health department in charge of a fulltime medically trained health officer with a competent staff necessary to carry on public health work. If your community should be one of the occasional small ones that are wealthy enough to afford such a service by itself, you would still find it difficult to offer an adequate professional challenge to a properly trained staff of public health workers.

By starting with the county as the unit of local health administration and by combining several small counties into one unit, Dr. Emerson's committee and the state health officers of the forty-eight states have a plan for giving everybody in the country minimum health protective services. Under this plan, there need be no more than one thousand two hundred local health departments in the entire country. These one thousand two hundred local departments of health could give minimum fulltime local health service to the nearly one hundred and forty million persons in the United States. Under the present system one third of the people either don't have such service or have it only with a part time and perhaps nonmedical director in charge.

Each of these local health departments would serve a minimum of at least fifty thousand persons approximately; many of them, such as the counties that include large cities, would serve larger populations, and have the benefit of additional savings in overhead. It should also be pointed out that there is nothing final about the one thousand two hundred units suggested by the committee. As each community works out its problems it may happen that a different arrangement of counties is desirable. Getting together with your neighbor communities and recognizing that town and country have common problems is most important.

Six activities you should demand from your local health department once it is organized are:

Record, tabulate, interpret and publish the essential facts about births, deaths and reportable diseases in your community, usually called vital statistics.

Control communicable diseases such as diphtheria, measles, tuberculosis, the venereal diseases and malaria.

Provide a sanitary environment favorable to health. This includes supervision of milk and milk products, food processing and public eating places, maintaining sanitary conditions of employment, controling disease bearing insects such as flies, mosquitoes or others, and a host of other activities.

Provide public health laboratory services for the community and private physicians.

Foster the hygiene of maternity, infancy and childhood, including supervision of the health of school children.

Educate the general *(Continued on page 712)*

By ALTON GOLDBLOOM

"When the child was grown it fell on a day that he went out to his father to the reapers. And he said unto his father, my head, my head. And he said to a lad, carry him to his mother (II Kings, IV: 18 and 19)."

THE above Biblical quotation gives a graphic description of a severe headache in a small boy, apparently followed by loss of consciousness; probably an attack of sunstroke. It is an example of one of the many causes of headaches in young children. Headaches in children present the same difficulties to the physician that they do in adults, because of the numerous and widely dissimilar conditions that may cause them. They may be anything from "headaches of convenience" to brain tumors.

A young child may, and often does, imitate his parents. He may be quick to grasp the value of the excuse of headache as a means of escape from an unpleasant or undesirable task. Just as the mother may plead a headache in order to avoid a social function, so may the child plead a headache in the face of a task which he fears may be too difficult or which may prove distasteful. It is an escape headache. This was well demonstrated in the case of an adolescent girl who was unequal to the tasks of schoolwork. She did not possess the mental equipment necessary to compete successfully with her comrades in the higher grades. She had headaches. Tests of her intelligence quickly demonstrated her incapacity, and removal from school immediately cured her headaches.

One of the better-known causes of headaches in children is eye strain, particularly astigmatism. Gross defects in vision may be evident by simple tests, but astigmatism can be discovered only by special means. Proper eye examination by a qualified ophthalmologist should therefore be the first step in attempting to solve the problem of headaches in young children.

Another important cause of headaches is anemia. Physicians who deal extensively with children encounter many instances in which simple blood examinations, hemoglobin and red

cells, will quickly solve the problem of headaches in an adolescent child. Relief of the headaches is successfully accomplished through adequate treatment of the anemia. Exposure to sun and to glare may cause severe, temporary headaches; in northern climates in winter, this is not infrequently found in children who play outside on bright days. These children must have their eyes protected by plastic or unbreakable goggles. Poor ventilation and noxious gases may also cause headaches in children.

Children often complain of headaches on arising in the morning and from naps. These headaches may represent a need for sugar. Some children use their sugar more rapidly than others; some need more in their diet. This need may express itself in headaches, relieved by taking something sweet. We have come a long way from the days when people believed

Children's Headaches

that sweets were "bad" for children. We know that actively playing children need extra sugar just as a briskly burning furnace needs extra coal. Many such headaches have been quickly relieved or prevented by the judicious administration of sugar at the proper times.

These are a few of the causes of headaches in children which may be regarded as not associated with serious diseases. Of course these are highly important and deserve careful investigation and intelligent treatment. There are other causes of headache, however, of much more serious import; we might attempt to consider a few of these in order to indicate that headaches must never be treated lightly and that in all instances of persistent or recurrent headaches in children, intelligent and careful search must be made for the underlying cause.

Migraine is a common disorder among adults that shows strong familial tendencies and often manifests itself in the children. The manifestations may often be those of abdominal pain and vomiting; but not infrequently the children of parents suffering from migraine may also have headaches. In younger children the abdominal symptoms may predominate, only to be replaced by headaches as the child approaches puberty. We have learned a little more about migraine in recent years, and are perhaps coming a little nearer to an understanding of the problem. Some drugs, certain types of diet, and other means have been used in an attempt to combat this trying disorder.

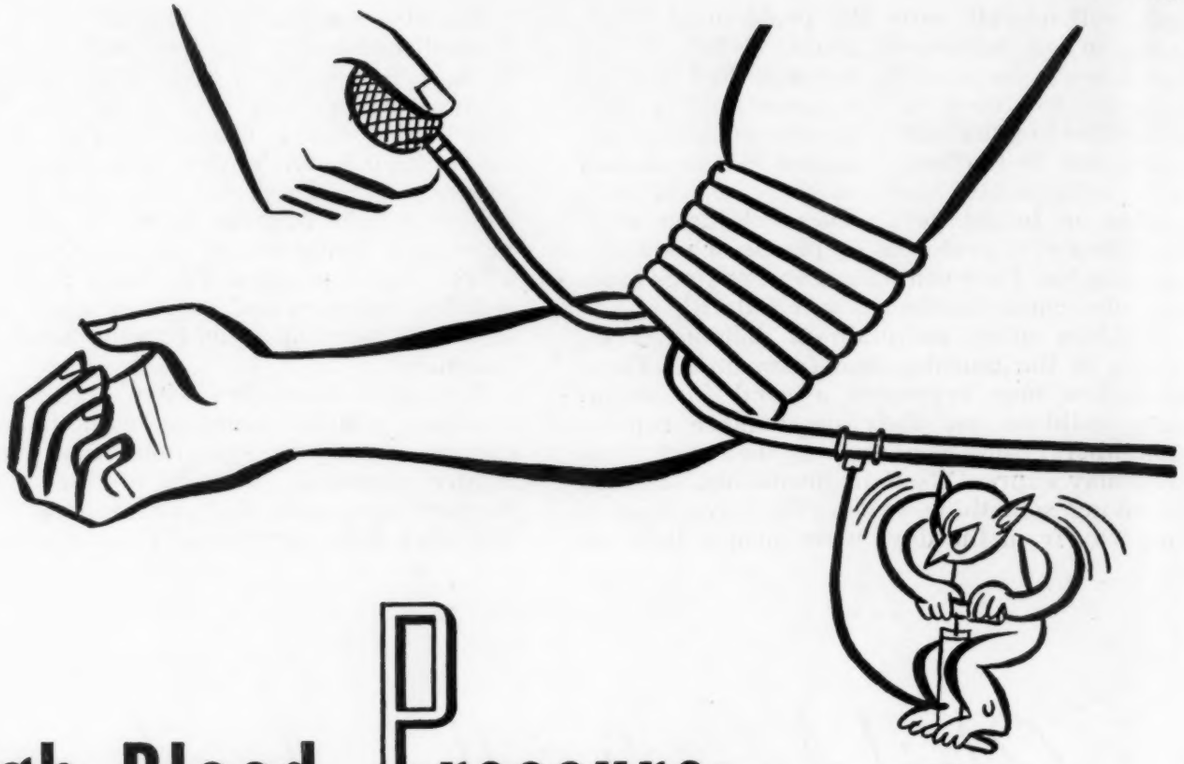
Migraine has two first cousins; one is allergy. A small number of children, indeed adults too, have been relieved of their symptoms with the removal from their diet of certain foods to which they were sensitive. The other first cousin is epilepsy. With proper means of investigation it can be shown that some individuals suffering from migrane have the same type of abnormal "brain waves" that is found in epilepsy. Great progress has been made toward relief of epilepsy, and migraine which is of this type will often also yield to the same form of treatment.

Persistent headaches when accompanied by unsteady gait, or vomiting, without nausea or failing vision are symptoms that cannot be lightly regarded. Tumors of the brain, old hemorrhages, cysts and chronic lead poisoning may give these symptoms. These are the graver causes of headaches in children, and must be treated without delay. Persistent headaches in children following a head injury no matter how many months or years before, demand the same urgent attention. Such symptoms cannot be left to chance, nor may they be palliated by home remedies; they require the intelligent attention of a competent neurologist.

Acute illnesses that begin with high fever may cause headaches. They are symptoms of scarlet fever, and occasionally of measles, chickenpox, and even German measles. In the first day or two of mumps, headaches may be quite severe, in fact they may be caused by a form of meningitis that not infrequently accompanies the onset of mumps. So, too, at the beginning of typhoid fever headaches may be quite severe. The headache in all these diseases usually occurs in the first few hours and lasts no longer than a day or two. Forms of meningitis naturally cause severe headaches, but it is hardly the function of parents to familiarize themselves with the symptoms of all such diseases. They must only realize that such headaches require medical attention, and sometimes urgently.

The kidneys cannot be disregarded in any consideration of headaches in children, for headaches often accompany severe kidney disorders as they do in adults. Here again sage medical advice is needed for solution of the problem.

It should be evident, then, that headaches in young children may *(Continued on page 702)*



FEAR

High Blood Pressure

By IRVINE H. PAGE and A. C. CORCORAN

ONE of every three deaths would be postponed, years of worry, economic dependence and illness would be remitted if arterial hypertension (high blood pressure) and its related diseases could be abolished. A miracle is unlikely today or tomorrow, this year or next. A time can be practically foreseen, however, when the fruits of research shall be garnered and the equivalent of a miracle achieved. The disease is so common, the need so great and the results of even the comparatively little study given it so encouraging that nothing must stand in the way of progress.

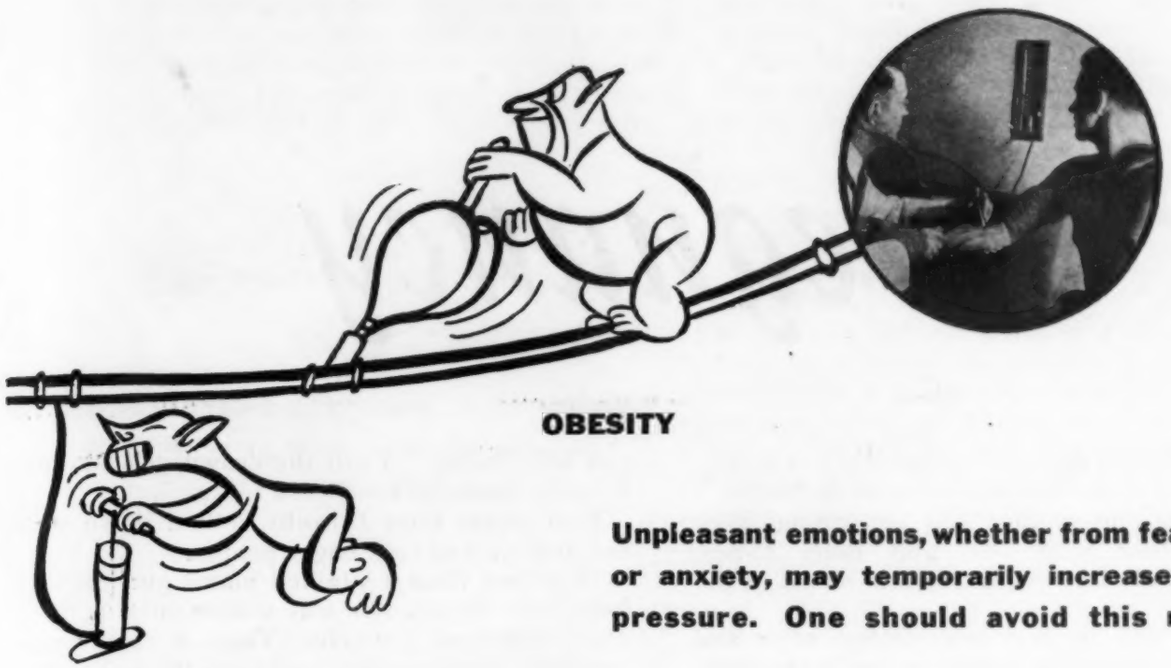
What is high blood pressure? What makes it high? And what can be done about it now? These questions cannot be answered satisfyingly in the scope of this article or in the light of modern knowledge. But an approach to an answer can be given to each of them.

Blood pumped from the heart flows through ever-narrowing channels (arteries and arterioles) into the smallest blood vessels, the capillaries. In these it is in close contact with living tissues and fulfils its functions of transport and nutrition. The channels that lead from the capillaries to the heart broaden as they join, and form veins. Little pressure is required to force the blood back to the heart. But a relatively enormous pressure is needed to pump blood through the smallest arterial channels (arterioles) into the capillaries. The level of pressure in the larger arteries is taken as the "blood pressure."

The first measurement of arterial pressure was made by a country clergyman in the county of Middlesex, England, the Reverend Stephen Hales (1677-1761). He took a mare, destined for slaughter, had her placed on a "common Field Gate" and connected the large artery of the neck with a glass tube and found that the blood rose in the tube to a height of nine feet six inches. The terms as well as the method have changed since then. Pressure is now recorded in millimeters of mercury rather than in feet of blood. The method consists in compression of the artery of the arm against the bone by an inflatable rubber bag. To mention only two, it seems likely that Beethoven and Doctor Samuel Johnson suffered from high blood pressure. But we shall never know for sure, because the means of measurement in human beings was not discovered until two hundred fifty years after Hales' first observation.

WHAT IS HIGH BLOOD PRESSURE?

When the modern method finally came into use, arterial pressure in normal adults was found to average 120 millimeters of mercury (roughly, 9 feet of blood in Hales' terms) during the time when the heart is pushing the blood and about 80 millimeters of mercury in the interval between beats. The former is called systolic, the latter diastolic, pressure, and the two are recorded this way—120/80. It is important to remember that variations around these



OBESITY

Unpleasant emotions, whether from fear, anger or anxiety, may temporarily increase arterial pressure. One should avoid this reaction

averages are wide in perfectly normal people. Establishment of normal values lead to the observation that arterial pressure is in some people persistently and abnormally increased. This condition is called arterial hypertension, or more simply, "high blood pressure."

Concept of arterial hypertension as a disease gained acceptance only about forty years ago. Even after the cuff method of measurement became part of the routine of physical examination, the meaning of the measurement was not altogether clear. Residues from the controversies of those days cloud some modern thinking about the disease. These differences arose from the fact that the condition is one which may persist for many years and during this time patient and physician often lose track of each other. Long periods of persistent observation were necessary before any sound judgment could be formed on the natural course of the disease or on the meaning of variations from the normal of arterial pressure.

WHAT CAUSES HIGH BLOOD PRESSURE?

The arterioles of patients who have long suffered from arterial hypertension are often thickened, narrowed and fibrous. Some took the view that this hardening (sclerosis) was the cause of the increased pressure, reasoning that vessel thickening should impede flow, so that arterial pressure must rise for the tissues to be nourished. Another group believed that the hardening of arterioles was the result of increased arterial pressure. The two diametrically opposed viewpoints have different influences on the study of the disease, on the treatment and on the outlook for the patient.

Hardening of arterioles is largely irreversible. The belief that vessel damage preceded the pressure rise had a gloomy undertone, since it suggested that there was little to do but tell the patient that the damage was done, that it will inexorably increase and, for want of anything better to say, that he had better take it easy.

But the bulk of evidence is now in favor of the second view that attributes vessel damage to the strain of increased pressure. The muscle of the arterioles first contracts, narrowing the vessels, so that the heart must beat harder and pressure rise to maintain the circulation. This explanation of arterial hypertension does not indicate its cause. Therefore those who adopted it gave the name, "essential hypertension" to the process, meaning that the first abnormality they could discover was the increase in arterial pressure. This well established view is a great deal more heartening than its predecessor, for the contraction of muscles, unlike their hardening, is at least theoretically reversible. Taking this view, as we do, the problem of arterial hypertension had two major facets, the first being the removal of the causes of increased pressure and the other the arrest and prevention of vessel damage.

Causes of the condition are still obscure. Arterial hypertension occurs in the courses of such diseases as Bright's disease, inflammation of the kidney and tumors of the adrenal glands. Hypertension of this type, whose cause is discoverable, can sometimes be rather simply relieved. However, it is infrequent, so that the search for one of these remediable factors is often fruitless, although always worth the effort.

In particular, one observation in animals has greatly stimulated re- *(Continued on page 684)*

Pregnancy

CHRISTMAS day arrived after much preparation in the Holmes household. Marion's father and mother and her young sister Julie, together with Bob and Betty Hines, arrived to help enjoy the day and share in the festivities.

Marion's joy in the anticipation of a son had given her a new radiance and her guests were quick to appreciate it.

"Marion, you look like a 16 year old on the way to her first party. What have you done to so outshine the rest of us?" asked Betty.

"Do you mean to say she hasn't yet told you about little Hiram?" said Marion's mother.

"Little Hiram? who is he?" responded Betty.

"Little Hiram is the most important member of the family," answered Marion, "and somehow from now on I imagine he always will be."

"Marion, stop it," her mother interrupted. "I don't like your flippant attitude. If you are not careful something will happen to the child. It will be a visitation on you for not having due reverence for the delicate condition you are in."

"Delicate condition! What a joke! I was never more full of vim and vigor in my life. Betty, haven't you guessed? John and I have added a new member to our household who is expected near the end of June. When he arrives we want you to be one of the first to meet him."

Not long after Christmas Marion had a telephone call from Dorothy Kent.

"I am surprised your curiosity is containing itself. I thought you were going to invite me to dinner and let me expound more of my pet theories to you."

"John has been away and he made me promise not to call you until he returned," said Marion. "He will be back this afternoon, though, so we would love to have you come tomorrow night if you could."

"That will be splendid," said Dorothy.

"And Dorothy, I have a favor to ask. Do you remember Betty Hines? I have discovered she is going to have a 'twin' for little Hiram. Would you mind if we included her, and perhaps Bob, her husband?"

"No, I don't mind—only if you keep adding people we will soon have to hire a hall. Do as you like though. Until the crowd gets too big, I won't object."

Two nights later Dorothy settled down with her audience of four eager people.

"The last time we talked about our growing baby," she began, "he was visible only as three small layers of tiny cells. These were between two little cavities which had been formed within a mass of cells located in the wall of a larger cavity. The outer wall of the large cavity had developed tiny projections over its surface and the whole thing had sunk down into the lining of the uterus.

"I told you part of the wall of the larger cavity eventually becomes the placenta, or afterbirth, as it is also known, and part becomes the outer layer of the bag of waters that surrounds the baby. The bag of waters and the placenta develop a little ahead of the infant so that it will have a protected place in which to grow. Since the placenta forms the connection between the baby and the mother, it will probably be best if we discuss that first.

"The little projections that are present on the outer surface of the hollow ball when it sinks into the uterine wall continue to grow. They become longer and soon each one has a treelike structure. They can destroy anything with which they come in contact so they immediately begin dissolving the tissue in the tiny area in the wall of the uterus where they have lodged. They do this to acquire nourishment. The broken up material is absorbed and used for growth. They also destroy the small blood vessels in the immediate vicinity so that this saclike structure covered by its shaggy outgrowths soon lies in a tiny pool of blood.

"These small projections are called villi and some continue to lie free in the liquid area they produce and others reach out further and attach themselves to the wall of the uterus. They do this so that the structure cannot be dislodged and so that it will remain firmly fixed in the place where it has settled.

"Within a few days after the villi have become firmly adherent to the uterine wall some of the cells on the inside of each one rearrange themselves and form little canals.

They are formed in the wall of the sac, too. When they are properly united the tubes in the villi are continuous with those on the inner surface of the sac and these all meet and empty into three principal channels.

"As you have probably guessed, these tubes are blood vessels and are filled with blood cells

By EDITH L. POTTER

This is the third instalment of life before birth that is described by one of Chicago's outstanding doctors

that were formed at the same time as the walls of the vessels.

"The vessels all unite and form channels which empty into three major blood vessels. These unite with blood vessels that have been developing simultaneously within the body of the baby. The three vessels leave the surface of the placenta and run through the umbilical cord, or navel cord as it is also called, to the baby.

"Then we have circulation of the blood from the baby, through the umbilical cord into the villi of the placenta and back through the umbilical cord into the baby, and out and back, continuously. Two of the vessels are used to carry blood from the baby to the villi and the other one is used to carry it back to the baby.

"This is established before the end of the first month of life—before the baby actually begins to look like a human being. The vessels are always inside of the villi so that the wall of the blood vessel and the wall of the villus (when we speak of one it is a villus and when there are many they are villi) lies between the baby's blood and that of the mother.

"I told you a few minutes ago that the cells of the villi dissolved part of the walls of some of the mother's blood vessels and as a result the mother's blood surrounded the villi. Normally, there is no intermixture of mother's blood and baby's blood. The baby gets its food and oxygen and everything else it needs to grow by the passage of these substances from the mother's blood directly through the walls of the villi, then through the walls of the baby's blood vessels and so into the baby's blood. Food particles are so small they seep through spaces that will not permit blood cells to pass.

"The baby eliminates waste products in the same way, but by reverse action. They leave the baby's blood, pass through the walls of the vessels and the walls of the villi into the mother's blood. She excretes them the same way that she does her own waste products.

"Do you still follow me?" and Dorothy paused.

"It sounds simple," answered John. "Baby's blood goes out and back. Walls of villi protect it and drink in what they want out of mamma's blood—hand it to the baby—baby uses it and returns what it doesn't want—all orderly and efficient."

"There is one more thing I should tell you before we leave this subject of the outer sac inside of which the baby is growing," resumed Dorothy. "After two months the villi that are on the top and sides of the sac degenerate and disappear. None remain except those at the bottom and in contact with the uterine wall. These basal villi continue to grow, and become more and more branched. The branches intertwine so closely it is difficult to make them out individually and they look like a solid mass.

"When the villi have degenerated everywhere except over the bottom portion of the sac, the part where they persist is called the placenta. It is also called the afterbirth because after the baby is born the mother no longer has use for it and it is expelled too."

"Does the wall of the sac remain after the villi have dropped off, or does it disappear too so that the baby lies free in the uterine cavity?" asked Marion.

"It remains throughout pregnancy and always contains fluid just as it did in the beginning. The fluid protects the baby in the event a blow should strike the mother's abdomen. And, what is more important, gives the baby space in which to move its arms and legs. If he weren't surrounded by fluid the uterine wall would fit so snugly that movement would be impossible. The extremities might become so cramped that they would be malformed. Nature has been clever in working out these devices to protect the infant.

"Any more questions?"

"Yes, just one," said Marion. "We have to breathe air to live as well as eat. Little Hiram gets his food through the villi of the placenta, but how does he breathe?"

"He acquires his oxygen (that is the only part of the air that we use) through the placenta the same way he does his food. When you breathe, the blood that is circulating in your lungs picks the oxygen out of the air that enters the lungs and carries it to other parts of your body where it is needed. The baby needs it too. Oxygen passes from the mother's blood through the walls of the villi into the baby's circulation, as food substances do. The carbon dioxide that is produced by the baby is transferred to the maternal blood and is exhaled through her lungs."

"I am growing more and more anxious to know about little Hiram *(Continued on page 692)*

By EDWIN A. FENSCH

GOING to school for the first time is a big event in the lives of Johnny and Suzy. It can be big in two ways: either it is a happy, important day or a tragic, heartbreaking day. Most of this depends on mamma and papa, and what they have done with their nursery school applicant or beginning first grader before he starts to school.

To any one not accustomed to the noise, tears and hysteria of the first day in a nursery or primary school, the effect is rather bewildering. A few boys and girls come willingly and seem satisfied to be going to school. Some are brought by their mothers and are willing to stay for the day. Many are frightened to the point of tears, and some become panic stricken when their mothers leave.

Worst of these cases is the child whose mother or father brings him to school with no previous information about the situation, drops him in the teacher's lap, so to speak, and leaves. The frightened child immediately begins to cry, struggles against the strangers who try to pacify him, and sometimes becomes hysterical at the whirlwind of activity in which he so suddenly finds himself. The day results in a shock to these children. Fortunately, some forget it, but some never quite erase the experience from their minds.

One day, at a nursery school, a mother ready to go to work brought in a preschool age boy. She put him on the floor, dropped his change of clothing and blankets, and walked out. The little fellow, sleepy, bewildered by the new faces and the uproar of recent arrivals who were engaged in free play, began to cry. He continued to cry throughout the day. At the end of his first day in school, the father called for him, but he refused to recognize him and did not want to go home with the father. He continued to cry and call for "Mamma." It was obvious that, in his childish mind, his mother had deserted him. The second day was a repetition of the first day, but as the days passed he gradually accepted the teacher's explanations that his mother and father would come back and get him. The mother seemed not to take the time nor expend the effort to convince him that she would return!

A little girl, who found herself in the same predicament, followed a teacher about all day long, silently crying and looking for "Mamma." She, too, had been unprepared for this sudden desertion by a mother who, to all appearances, had been dependable before.

Parents should realize that preschool children have been entirely dependent on them for years before their entrance in school. Mamma and papa have always been somewhere near, and on those occasions when they have gone away, the child was usually left in the home—an environment with which he was familiar. Furthermore, the child was not surrounded by strange adults and children who added to his confusion. It was not an entirely happy situation for many of them when mother and dad went away, but they were at home, a place of security.

Now, without warning to some, they are aroused one morning, often dressed in their best clothes, taken to a strange building and left for the day. How is this dependent child to know what has happened to him unless the parents have spent a considerable time explaining the situation in advance?

Parents with children about to go to school, and especially families where there are no older children, should begin talking about the opening of school days during the preceding summer. They should describe to this child the pleasures of going to school, the other boys and girls he will meet and play with, the teacher he will meet who will teach him to do things that mamma and daddy do, games he will play, anything they can think of about school, that will excite the child's interest.

Little Johnny will perhaps want to know many things about this big step he will take. Why is he going to school? How long will he be there? What will mother and father do while he is in school? What if he wants them; can he get in touch with them at once? How? What will the teacher do? What is her name?

He should be told that all other boys and girls go to school just as he will, and that he will like it there. He will come home for lunch (when he will see mother) and then go back like the other boys and girls for the afternoon session. He will be told by the teacher when he may go home each morning and afternoon. Probably, the first few weeks, he will come home early; he will not have to stay for the entire school day.

Parents can think of many things to explain to the child as he asks questions about the beginning of school. These questions should all be treated seriously, and in a manner to suggest that school will be a happy time.

This child also needs some instruction about his going to and from school and his behavior there. He should be taught the safest way to go to school; how to watch the traffic lights and to obey the school boy patrol. How to come home safely, and not to run blindly in order to get home the sooner.

The mother or father should walk to the school sometime before the opening day and examine the building with this prospective pupil. Johnny should familiarize himself with the grounds, even though he has passed them many times before. He could look in the windows, speculate on which room he will have for his own, which door he will enter, and so on. This will give him a sense of security about the venture; it will take away much of the strangeness of the situation. *(Continued on page 719)*

Getting
them off
to
SCHOOL

WHAT is the average dental caries rate in children between the 6 to 19 year age level? Do children from high-income homes have better dental health than those from middle and low-income groups? Can parental interest be sustained in a long range program of dental education? Do Negro children have sounder teeth than white children? What is the relationship between poor teeth and truancy?

These and other questions are being specifically answered in the St. Louis school system's long range program in dental education. Survey of the first year of operation shows some interesting and sometimes alarming statistics.

Long range planning has been the exception rather than the rule in any profession or business during the war years. The St. Louis program is a worthy example of what can be done, even with sharply reduced staffs, when cooperation is achieved between schools, parents and dentists.

Sparked by the exposure of the poor dental health of the nation, the St. Louis program has aimed at the root of dental trouble, the early examination and correction of dental decay and malformation at school and preschool age levels. Such a program needs the full cooperation of the Board of Education, and St. Louis has that, particularly in the person of Philip J. Hickey, Superintendent of Instruction.

Need for an examination, educational and corrective program as part of the school curriculum had long been recognized by the St. Louis Dental Society. In 1933, in an effort to emphasize this need, the Committee on Public Health Education of that body, with more than two hundred local practicing dentists, under the chairmanship of Dr. O. W. Brandhorst, voluntarily conducted a survey in public, Catholic and Lutheran schools of the city. Examinations included children of white, Negro and other races, elementary and high schools, to a total of one hundred and nineteen thousand four hundred and thirteen pupils. Although this survey disclosed that more than 94 per cent of the pupils needed some dental attention, no action was taken then to establish an organized dental health program in the public school system.

In 1942 the State Director of Dental Health, cooperating with the Commissioner of Health for St. Louis County and the St. Louis Dental Society, loaned to the county a member of the State Dental Division to organize and conduct a dental health program in the county. Following the success of this program over a two year period the Council on Dental Health, of the St. Louis Dental Society, placed before the St. Louis Board of Education the advisability of establishing a similar program in the St. Louis public schools. Due to the active support of the two dental members of the board, Dr. H. O. Winterer, now president of the board, and Dr. Francis C. Sullivan, and to the active interest shown by Lloyd L. Tate, M.D., director of the board's Health and Hygiene Division, the board moved to adopt the dental program in the summer of 1944, at the same time appointing as director of the program the public health dentist who directed the county program.

Thus, in 1944, the Department of Dental Health was created within the Division of Health and Hygiene of the St. Louis school system. Its main objective is simple: Raise the filled tooth rate among school children to the maximum, reduce the decayed tooth rate to the minimum.

Dr. Alexander Murphy, M.S.P.H., a practicing dentist for nine years in Ottawa, Canada, previous to his postgraduate work in public health science at the University of Michigan, was engaged as full time director of this program. Under his guidance, he and his staff examined nineteen thousand eight hundred and two children in twenty-nine St. Louis schools in the first year of operation.

There are no complications evident anywhere along the line. Paper work and follow-up activity are reduced to simplicity. Objective of Dr. Murphy and his staff of one full time, four part time and one part time Negro dentist, is to examine each school child once every two years. This is a heavy load in a city the size of St. Louis.

St. Louis' program is an example of what can be accomplished through the cooperation of schools, parents and the dentists

The work now under way is largely to catch up with existing dental health conditions. Once the examination of each school child has been completed and correction begun, the work of the dental division will be less staggering. Then will come the task of maintaining the level of the good work.

Children so far examined represent a cross section of city schools. Each dentist examines alternately a low income, average and high income school, and care is taken to conduct such examinations in each section of the city. In advance of actual examinations, Dr. Murphy visits the school principal to outline the dental health program and arrange a thirty minute meeting with all teachers of the building to explain its purposes. Authentic dental health literature is given each teacher with suggestions for using the basic material to form health talks suitable to the age level of her classroom. Forms for each child examination are left for preliminary fillout by the teacher.

A similar meeting is arranged with the parent group of the particular school, and in addition to an explanatory talk concerning the object of the program, the actual assistance of mothers is requested in conducting examinations. One mother tends the portable sterilizer, the other

If examination reveals that a child is in need of dental treatment, the parent present is told of it, with suggestions that she consult her family dentist. A second form is given the parent, or child if the parent is not present, outlining the dental conditions found in simple terms. A third form is provided, to be left by the parent with the family dentist, who holds it until he has completed the dental work designated. On completion, this form is returned to the child, who presents it to his classroom teacher—who turns it over to the school nurse. The nurse reports on the receipt of these forms to Dr. Murphy's office. If parents are unable to pay for dental correction, they are instructed to take these two forms to the Municipal Dental Clinic. The school nurse makes the appointment and instructs them as to the location.

A running record of each child examined is kept by the assisting mother who records dental conditions during the examination. This form is given to the school nurse, who uses it as a follow-up guide in checking to see whether the child is receiving dental treatment. At the close of the school year this form is also sent to Dr. Murphy's office. If parents are slow in starting the necessary corrective work, the school nurse sends a follow-up notice two

St. Louis DENTAL HEALTH *Program*

By MARGARET ALBRIGHT STEDMAN

fills out the record forms. Invitations are sent to seventy parents several days in advance of scheduled examinations. Children whose parents are present are examined first, and if the parent has more than one child in the building, these are examined at the same session.

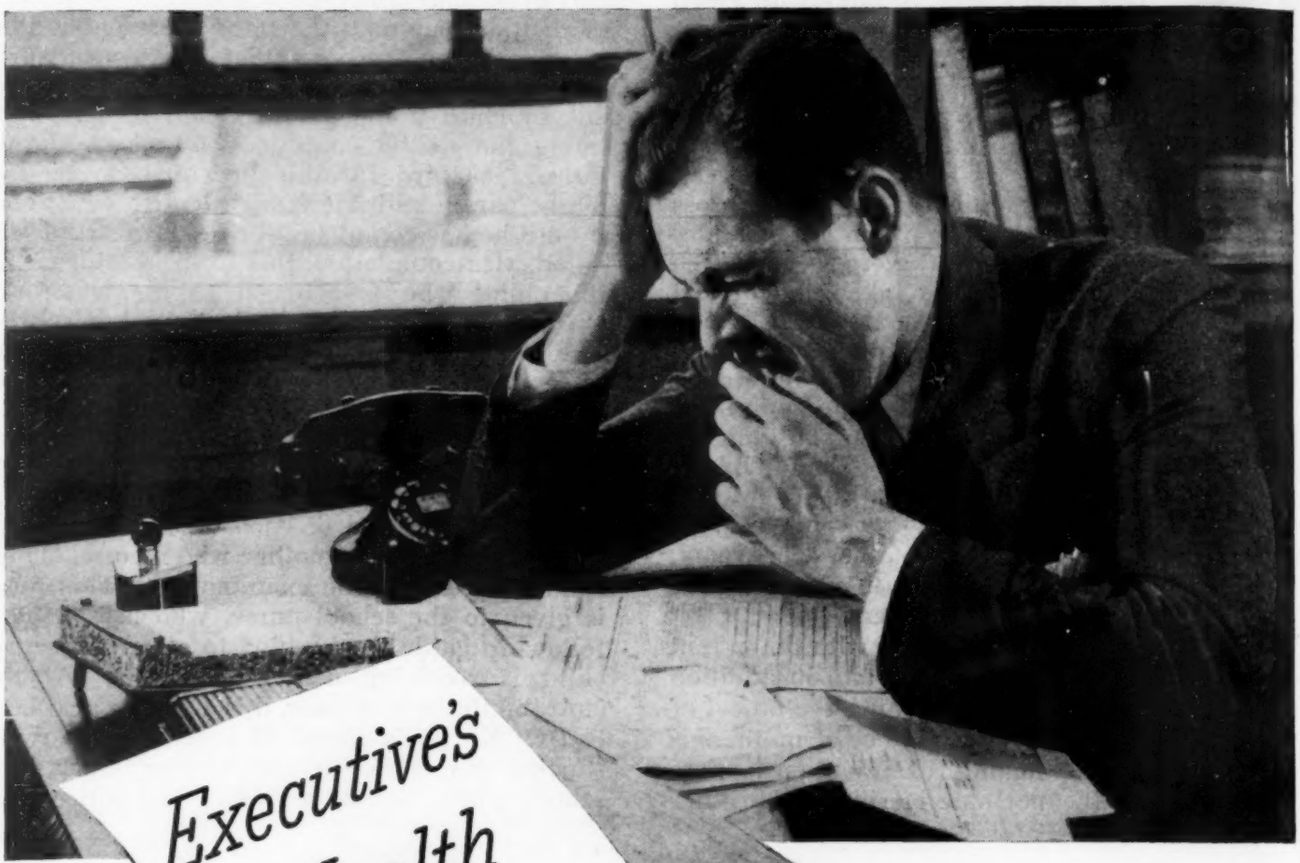
Examinations are not conducted in classrooms because of confusion and disruption of school schedules. A separate room is used, equipped with four chairs, a table, portable sterilizer and towels. A short explanatory talk is made to parents before examinations begin. Children are sent in groups of five by the teacher, who provides them with their identified forms. As soon as the examination is completed, and any existing conditions discussed with the parent who is present, the children return to their class work. Each fourth child examined is instructed to tell the teacher to send in five more children. In this way, examinations proceed in order with little waste of time. Forty children can be examined in the morning, thirty in the afternoon

months after examination to spur the interest of the parents in giving their children a healthy mouth.

After examinations are completed in a particular school, the school dentist gives a health talk to all children, in three groups—lower, middle and upper grades.

Findings for each school are tabulated on a form that records decayed, missing and filled teeth for each age group. This provides a record of the dental health of the school, and will serve as a gage for measuring the trend of dental health at future examinations.

St. Louis is probably as representative a city as can be found in reflecting average urban conditions of the nation. The findings in dental health of school children are therefore extremely interesting. While nineteen thousand eight hundred and two children in twenty-nine schools have been examined, the results of the six schools scheduled toward the close of the school year, with their five thousand two hundred pupils, have not *(Continued on page 716)*



Executive's Health in Industry

By T. Lyle Hazlett

PERSONNEL of industry responsible for its plans, policy and administration has been wofully neglected. No effort is made to regulate the activities and the working time of this group and the conditions produced by the growing complexity of industry are adding to their burdens.

You are aware of what has been done to safeguard the health interests of employees. I need not tell you of the programs of physical examinations, educational efforts, nutrition campaigns, safety precautions, and of the control of the plant environment to maintain hygienic working conditions. These are established practices with which we are all familiar. None of us would like to see a single gain in these fields placed in the slightest jeopardy. Yet, few of us have ever considered the problem of making these benefits universally applicable.

During the past year we made a fairly extensive cardiovascular survey of nine hundred and nine supervisory employees of the Westinghouse Electric Corporation. This was a repetition of a similar study made in 1944. Age range in this study was from 20 to 72 years. Frequency of cases in whom no abnormal findings were recorded fell rapidly with advancing years. With reference to such a condition as high blood pressure we found a great increase in the higher age groups, but a marked decrease when we reached the oldest group. This last finding was simply due to the fact that people with hypertension are not apt to survive long enough to reach the advanced ages included in our survey. The abnormalities we found increased greatly as the 40 year old group was reached and rose sharply above this age.

An interesting finding in 53 cases giving a his-

tory of heart disease was that such disease was found only in 42 cases. On the other hand 23 persons who offered no complaints relative to the heart had cardiac abnormalities

These figures raise an inevitable question: What shall we do about it? The answer has several important parts. First is the health survey of the type just illustrated. A health examination should be a regularly scheduled duty of every manager. A program, if necessary, should be outlined by his physician and carefully followed. Petty inconveniences necessitated by the program may require a little self discipline.

Aside from medical recommendations that fit specific cases, there are recommendations applicable to all of us. First of all, view your petty annoyances objectively. Do not magnify them. In the course of a busy day they may be numerous. If you keep them their normal size they can be readily brushed aside. If you allow them to cause irritation, anger or wounded pride they quickly grow into a monstrous size. Remember, petty annoyances are great threats to your nervous and mental health. They may be quickly neutralized simply by ignoring them. Do not spare the antidote; spare yourself.

Annoyances suggest the petty activities in which many of you delight to indulge. Do you type your letters? No, the question should not startle you. Is it not a fact that you daily perform tasks that require even less skill — tasks you could entrust to your assistants? Aren't there many functions you could assign to trusted aides? Probably, if you assigned these duties to a subordinate, you would increase the latter's interest and pride in his job. He might be a happier and, possibly, a more efficient and loyal employee. You would have more time and energy for the essentials of your work and consequently — a happier and healthier manager.

A national survey has proved that industry is overlooking the health of its executives

Let's consider one of the grave issues. What do you do about the difficult problem that plagues you daily and challenges your abilities to find a solution? Do you remain in your chair traveling the same mental pathways time after time and striking the same hopeless wall no matter how often you seek a solution? Don't you recall similar difficulties that solved themselves when, in despair, you sought refuge away from the office? Have you forgotten that lesson? Above all, why have you forgotten the futility of taking vexing issues to bed with you? You know better, of course, but you cannot escape. You need sleep—eight hours of it, on the average, and you should plan to get it. If anything disturbs its normal cycle, you will fall into a chronic state of insomnia that is a wretched fate. Your doctor can save you from this. Tell him your troubles.

This passes the question of a vacation. I assume that you have shown enough wisdom in conducting your life to make the proper use of the one day in seven that has been dedicated to rest? This periodic pause is a good thing indeed; but it is not a vacation by any definition. A vacation means a fairly prolonged departure from accustomed scenes and routines. A departure in which we replace our usual activities with others involving an element of play. Activities that we perform for the exhilaration, enjoyment, and restoration of strength which they bring to us; activities that place new horizons before us, that broaden, fortify and regenerate our powers. Of course, I know your objections. You state you enjoy your work, that you perform it with the zest that really makes it play. This is lack of vision. I am tempted to alter an oft quoted line to my own purposes and tell you that

"Work is work
and play is play
and seldom the
twain shall meet."

If you should continue your insistence that your work is play I should still refuse to agree. I should tell you you can't play all the time; so settle down to work and get some recreation! You will be the better for it and the sum total of your accomplishment will be greater.

You sometimes boast you do not neglect your exercise. You point with pride to your membership in the business men's division of the local athletic club. You attend irregularly, to be sure, but when you do go, what a "workout" you give yourself! True you are tired the rest of the day, your mind refuses to function and your body is limp. But while you were there, you went at it with the vigor of a young wrestler in training. You felt the strain in every muscle, and even if you were inflicting a terrific beating to your body you were exulting in the conviction that you were still young and able to "take it." If you go about it intelligently you will *(Continued on page 704)*

SAFE WATER

for the Americas

LATIN AMERICANS are arming themselves to stop a gang of killers. Many of them bear strange and terrifying names: yaws, sprue, typhus, dengue, yellow jack, filariasis, Chagas' disease, black plague and leprosy. Some that sound less frightening because they are more familiar to North American ears carry even more notches on their guns.

The fight has been and will continue to be a tough one. Take trypanosomiasis, for example. Scientists now are scouring the Amazon jungles in an effort to track down the sand fly that carries the deadly protozoan air troopers. In other, better known diseases, prevention and cure is a long, complex and frequently discouraging process. However, several of the worst destroyers among the microscopic enemies are now retreating before the scientific attack. In due time, they may be banished from the hemisphere, as cholera was banished decades ago.

Nowhere, according to surveys by the Institute of Inter-American Affairs, is the prospect for success brighter than in the battle against waterborne diseases. One of the invaders that finds itself with less and and less "lebensraum" is the nasty, rodshaped typhoid fever organism. Another is a first cousin to the ameba that cavorts on microscope slides to the fascination of North American high school students. It—and an even more dangerous bacillus—cause the weakening and often fatal dysentery that afflicts so many Latin American rural adults, and is responsible in a large measure for high infant death rates.

These are not the only dangerous waterborne diseases. Eelworms, whipworms and blood flukes may be carried in the same way. In some areas from 90 to 100 per cent of the people harbor intestinal parasites. Some of the weapons that are helping turn the tide against these aggressors are supremely simple. In many cases

Latin Americans are arming against a gang of killers recruited from the ranks of some of the most dangerous diseases

By CLARENCE I. STERLING Jr.

they are nothing more than concrete spring covers and iron pipe—in short, safe water supplies.

Of course, many Latin American cities have long had safe community water systems. Like the magnificent Roman aqueduct that still brings water to Segovia, Spain, they have been delivering clean, pure water to the people since early times.

In the metropolises of Latin America—which frequently have been world leaders in modern architecture and city planning—purring electric pumps and elaborate filter systems provide safe water at the flick of a shining faucet handle.

It is in the rural areas that the waterborne germs have carried on their best guerrilla warfare. Endameba histolytica and his friends have found themselves scooped out of streams and springs in gourds and gasoline tins by unsuspecting housewives and delivered to their growing children.

They have been carried, Trojan horse style, into town in creaking watercarts and ladled out, at a price, from door to door.

They have found their way through infinitesimal cracks into the worn pipelines supplying ancient fountains in public plazas, and spilled picturesquely into waiting water jars.

The tragic results are best described in mortality statistics. Although in parts of Latin America the typhoid death rate has been reduced to 1.8 persons per hundred thousand population, it ranges elsewhere as high as 30.2 fatalities.

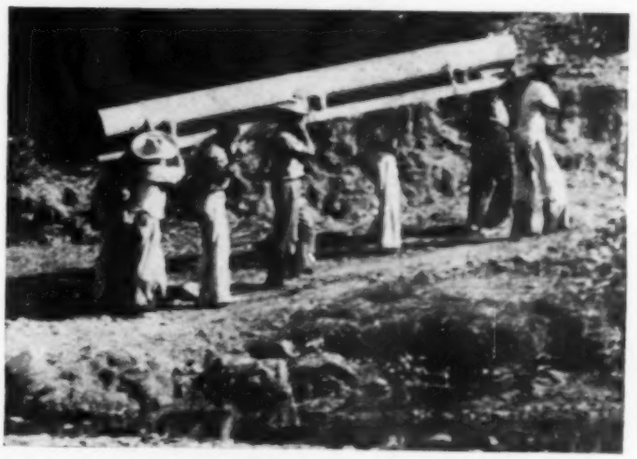
Deaths caused by dysentery are higher. In one Latin American country they totaled 60.3 persons per one hundred thousand population, according to the most recent survey. In four other nations they range from 42.5 to 48.7 deaths per one hundred thousand people.

The saddest story of all is told by the infant death rates. Deaths of babies in the eighteen countries in which the Inter-American Cooperative Public Health Service program is operating run from 51.7 deaths to 200.2 out of every thousand that are born alive. Again, these figures are for every one thousand births.

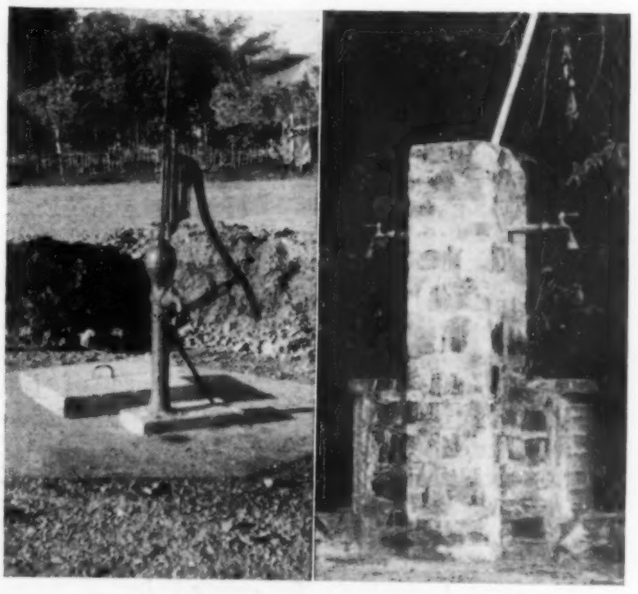
Latin American countries have been, of course, only too acutely aware of what these statistics mean in human and economic terms. Certainly, the mothers who have lost a child know. And there are many villages where every one has seen a friend or relative die.

In strictly economic terms, the need for more people to push forward *(Continued on page 698)*

An ounce of prevention is indeed worth a pound of cure when safe water is needed

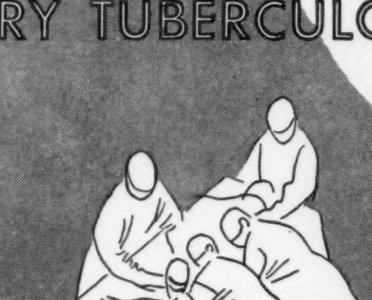


Implements for safe water were often only simple concrete spring covers and iron pipe



In some cities hand and purring electric pumps provide safe water at a handle flick

PULMONARY TUBERCULOSIS



Surgery

IN recent years, the medical profession has carried on an active campaign to educate the public in the aspects of pulmonary tuberculosis: its causes, symptoms, methods of spread, prevention, treatment and cure. This program has made communities tuberculosis conscious and they have become highly organized to combat the disease. Efficient team work between physicians, nurses, public health services and social agencies has decreased the incidence and mortality rate of the disease. Government and private agencies have increased their budgets in an aggressive and sincere attempt to wipe out the disease.

The care of the tuberculous has become highly specialized. Physicians make a life study of the tuberculosis problem and an intensive training program for younger men to fit them for the specialty has been emphasized. Part of the responsibility for the cure or symptomatic improvement of the tuberculous has been turned over to the thoracic or chest surgeon. He too has become highly specialized by training and experience. Every well organized and well equipped hospital for the care of the tuberculous must have thoracic surgeons. It is their function to try to cure tuberculosis by various technical procedures. Before evaluating these procedures, it might be well to summarize briefly some of the medical aspects of the disease.

Human tuberculosis is caused by a germ called the tubercle bacillus. This germ may settle in almost any of the body organs but it is found most frequently in the lungs. When it invades the lungs it produces fairly characteristic reactions varying from mild to more pronounced symptoms. These symptoms may be a slight hacking cough with or without expectoration, fever, chills, loss of appetite and weight. On the other hand, the first symptoms may be a profuse hemorrhage from the lungs or those which resemble a severe pneumonia with prostration and high fever. Examination of the sputum in the laboratory will usually demonstrate tubercle bacilli. X-rays of the lungs reveal lesions that we have learned are characteristic of tuberculosis.

The natural resistance of the individual may help to ward off the disease under medical supervision, which includes complete bed rest, fresh air and a high caloric and vitamin diet. If the disease has not been arrested, then the incipient stage passes into the moderate or far advanced stage. In these one or both lungs may be involved to such an extent that the tubercular process has hollowed out portions of the lung and produced cavities. As long as cavities in the lungs persist, symptoms continue, the sputum remains positive for tubercle bacilli and the patient becomes a carrier and from the public health standpoint a menace to his fellow man. In the case of such a patient the medical specialist seeks the advice and consultation of the thoracic surgeon. The patient's condition is thoroughly discussed and the method of surgical attack is considered. Among the great advances in the treatment of tuberculosis have

been technical methods which are used chiefly by thoracic surgeons to close tubercular cavities in the lungs and render the patient sputum negative, and symptom free. Subsequent rehabilitation and occupational retraining and social and psychologic readjustment restore patients as useful citizens. To quote from Edward Hochhauser, executive director of the Altro Workshops in New York City, "Sheltered workshops and colonies have demonstrated that relapses can be reduced and patients in all stages of the disease gradually returned to partial or complete self support. They have often indicated how industry can reemploy their arrested tuberculous workers with mutual profit."

You have perhaps wondered how it is possible to operate with comparative safety on people with diseased lungs. Modern methods of anesthesia, modern methods for the preparation of patients for operation, and newer concepts in postoperative care have minimized surgical risk. Instruments and technics have been perfected to such an extent that what seemed hazardous or impractical in thoracic

By LOUIS CARP

surgery a few years ago has become comparatively safe and standardized today.

The aims of various technical procedures to improve or cure pulmonary tuberculosis are to rest the lung and diminish its excursions by collapsing it and to close cavities in the lung by mechanical pressure. This pressure often kinks a branch of the wind pipe, known as a bronchus, which leads air into the tubercular cavity. When this occurs air cannot get in or out and the walls of the cavity have a tendency to collapse. Sputum expectoration then becomes diminished or it ceases, symptomatic improvement and disappearance of tubercle bacilli in the sputum follow and eventual cure may occur. There are various improved technical procedures included in collapse therapy that are used in the closure of tubercular lung cavities.

Pneumothorax is produced by injecting air around the lung that crowds it away from the chest wall. The lung collapses in varying degrees, depending on the amount of air pressure. The effect of such collapse is to rest the lung and aid the mechanical factors that promote the collapse of a cavity. Pneumothorax therapy is used more extensively than any other collapse therapy. Its advantages are that it is a comparatively simple procedure and that it does not produce a permanent collapse of the lung. The lung can be permitted to reexpand at any time that clinical improvement warrants it.

Another procedure is phrenic nerve crush. The phrenic nerve is about the size of a pin and takes its origin from the spinal cord in the neck. It then courses down through the chest cavity and supplies nerve branches to the diaphragm. The diaphragm is situated between the chest and abdominal cavities and each time you breathe the diaphragm moves. This movement can be stopped on the side of the affected lung by operating and exposing the phrenic nerve in the neck and crushing it. The immediate effect of this operation is to paralyze the diaphragm on the same side. When this occurs, the paralyzed diaphragm becomes raised in the chest cavity and in this way the lung movements on the same side become diminished and additional rest for the lung is secured.

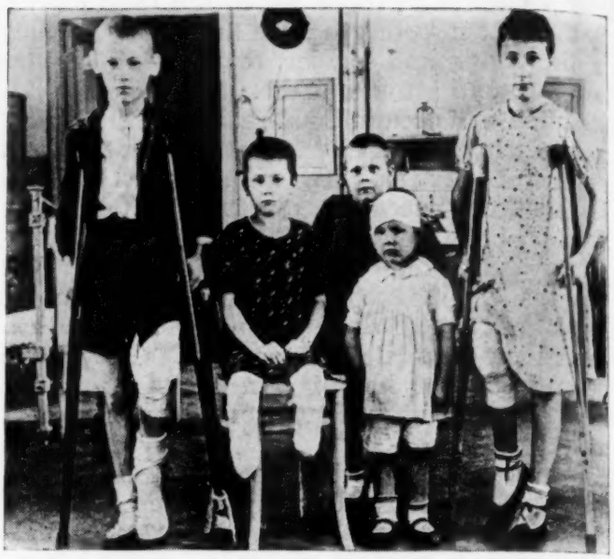
Pneumolysis is the division of tissue adhesions between the lung and chest wall. These adhesions usually can be seen in the x-rays and are often an aftermath of pneumothorax. The pneumothorax is prevented from producing the maximum lung or cavity collapse by these restraining adhesions.

An instrument known as the thoracoscope is used in the operation of pneumolysis. It is a specially lighted instrument with a special system of lenses. Under local anesthesia the shaft of the instrument is introduced between two ribs in the chest wall and into the pneumothorax cavity. There can then be visualized the restraining adhesions together with the lung, the heart, large nerves and blood vessels and the diaphragm. Then the adhesions are cut by an electric current which is carried by an electrode introduced through another opening into the chest wall. Often, after this procedure, the sought for further collapse of lung or cavity is easily seen through the thoracoscope. Subsequently, the pneumothorax is continued and more x-rays are made of the chest to demonstrate whether lung or cavity collapse has been successful. The sputum may turn negative in days or a few weeks. Pneumothorax is then maintained for months or even a year or two and if symptomatic cure has resulted the pneumothorax is abandoned and the lung is allowed to reexpand.

Surgical removal of portions of or the entire lengths of ribs on the side where the lung is affected is called a thoracoplasty. The number of ribs removed is dependent on the extent of the lung involvement. Usually the first three or four ribs are excised at the first operation. After waiting three to four weeks several more ribs can be removed. If further surgical procedure is warranted, then a few more ribs are excised after several weeks. Sometimes nine or ten ribs are operated on. The three stage operation is known as stage thoracoplasty. This staggered method of operation is used in order to avoid doing too much at one time. The effect of these stage operations is to remove a rigid wall from around the *(Continued on page 714)*

Rehabilitation in Russia

By EDWARD C. CARTER



America's artificial limb help to Russia is making life useful for the thousands of handicapped men, women and children

IT WAS strange and painful to see the constant stream of people, young and old, hobbling along on crude crutches in Stalino. Try as I would to look the other way, I couldn't help staring at them—Red Army men who had lost their limbs in battle, women and children who had been maimed in bombings and mine explosions.

This was during the early days of my tour through devastated areas of the Soviet Union. Gradually my eyes accepted the sight of hundreds of handicapped and maimed in the villages, towns and cities we visited. It was better that way. I could then talk to them naturally. From each conversation, there was one outstanding impression—no one mourned his plight or wanted sympathy. I remember 10 year old Petrov, who had lost his right arm and both legs. His left arm, too, was shattered but, through the miracle of surgery, it was on the mend. I shall never forget how, in halting English, he asked me to thank the Americans who saved his arm. The operation would not have been possible if the hospital had not received a shipment of American drugs and medical equipment a few days earlier. "American uncle," he said softly, "your people have given me back my arm. I am happy. I will use it to help my country and to serve the world."

The road ahead will not be too difficult for this little Russian boy with a properly fitting, comfortable artificial limb

Just one hand left—and he was grateful. The truly great significance of our Russian Relief artificial limb project became clear to me. If, through our efforts, Petrov could have artificial limbs, too, how much greater would his service to his country and world be! There were hundreds of thousands of Petrovs throughout the Soviet Union—and many more adults similarly handicapped—all eager to make their contribution to humanity.

I remember visiting a hospital where experimental work on prosthetics is maintained. There I talked with an extraordinary young engineer, V. C. Konovov, who lost his arms in the war. With the aid of an artificial arm, one of a few sent to Russia last winter by our agency, Mr. Konovov was designing and making appliances for other amputees. We saw sets of hands designed for every manual activity from hammering to writing. To demonstrate his special "workmen's" hands, Engineer Konovov drove a nail into a board *(Continued on page 706)*

By Everett T. Duncan

FINGERNAIL DISEASES

Nail brittleness can be congenital or acquired by typing, vitamin deficiency or polish remover

FINGERNAILS are more important than is generally realized. Besides their cosmetic attraction when they reflect good hygienic care, they protect our fingertips and aid immeasurably in our dexterity. Physicians often glean some indications of unusual or abnormal tendencies of a patient by inspecting the nails. Notice the closely bitten nails of nervous, high-strung nail biters; the blue nail and bulbous finger of people afflicted with heart ailments or chronic lung disease; the transverse ridges prominent after a severe illness such as scarlet fever; the pitting of the nails in psoriasis; the color changes and undermining of the plate in fungus infections; and the brittleness and separation from various causes.

Nails are composed of a tough substance called keratin (horn) which forms the base of the nail and all horny tissues. The tougher the tissue, the more closely packed are the cells in that tissue. Keratin is insoluble, and a form of it has been used for coating pills when it is desired that they pass through the stomach unchanged.

Normally, nails make their first appearance on the upper surface of the fingertips in the third month of fetal life. At first there is a thickening of the outer layers to form a ridge that hardens and breaks through the surface about the fifth month. As the fetus develops, the nail pushes over the nail bed to become fully formed by the time of birth. Notwithstanding some superstitions, the nails of the newborn baby soon require trimming and should be carefully cut to avoid breaks in the baby's tender skin by scratching and creating openings for infection.

Throughout life the nail is formed in the matrix, part of which is visible as the lunula, or halfmoon area, at the base of the nail. The folds on the sides are clefts which aid in directing the nail forward. The nail bed acts as a support for the nail and does not take any part in its production. Growth is more active in pregnancy, in warm weather and in young people, averaging about one thirty-second of an inch weekly and requiring from four to seven months for complete regrowth.

Certain hazards are to be avoided in nail care. White spots, or, in medical parlance, leukonychia, are due to air in the nail substance resulting, perhaps, from too vigorous pushing back of the nail base in manicuring or other minor injuries. Total whiteness of the nail is rare and may be hereditary or the aftermath of severe toxic conditions. Treatment consists of avoiding such rough pressure as might occur from using an orangewood stick. An advisable form of cuticle care for one susceptible to this condition is to wipe the borders of the soft tissues with an oiled damp cloth while they are soft.

Brittleness of the nails may be congenital or acquired. Suggested causes are mild, repeated trauma as in typing, vitamin A deficiency, or the use of nail polish removers containing acetone. Today, buffing with an abrasive is not used as formerly. Files or emery boards should be avoided to prevent aggravation of a splitting or peeling tendency. In these cases the nail should be clipped behind the split area. Constant chewing of the nails with the resultant saliva moisture may cause dissolution of the cells and their separation. The nail biting habit is acquired usually in childhood. Unfortunately, in many cases the habit is carried to varying degrees through adulthood. *(Continued on page 710)*

ANTISOCIAL CHILD
in a Social World

By BERNARD HIRSHBERG

THE perverse child may not be aware that he is "different" but a hostile world will never let him forget it. The child who is maladjusted may not know the cause that made him a bully, a quitter or one who isn't liked by his playmates, but his antagonistic attitude may be a defense mechanism to make living tolerable.

The world will not stop in its hurried course for the individual who is a variation from the normal. The individual must adapt himself to the mode of the world about him.

In this quest for adaptation a mother can be of much inspiration to a child that is floundering to keep above water!

Is yours an antisocial child? Are you one who never lets him forget he is "different" or are you helping him to find a useful and recognized niche in society? Test yourself with the following questionnaire. Compare your notations with the "Control Answers."

1. Have you attempted to locate the cause of the lack of sociability on the part of your child?

2. Did you classify his particular type of antisociability?

3. Do you encourage him to develop his natural abilities?

4. Do you take sides with him whenever the other members of the family are against him?

5. Have you ever considered his antagonisms may be the result of shock?

6. Do you try to eradicate the memory of this shock?

7. Do you realize his aggressiveness may be really timidity?

8. Is he aware that you feel he is entitled to the same affection by you as other children?

9. Does he know that he need not dominate to be accepted?

10. Do you attempt to win him gradually or do you demand immediate conversion?

11. Do you encourage him to join a school team, club or other groups?

12. Do you make the most of his ability to be a leader?

13. Do you see to it that he associates with boys of his own mental age?

14. Have you convinced him that getting along with people is an art?

15. Do you know that his antisocial feelings may be the result of associating with friends who are inferior to him mentally?

16. Have you made him understand that getting along with people calls for give and take?

17. Have you made him feel that this is a cooperative society and one has to comform and contribute to this society?

18. Have you shown him that to inspire friendly responses one must offer friendly stimuli?

19. Have you taught him to share burdens when his attitude is, "Let George do it"?

20. Are you certain that the family is an ever present example of the social amenities?

Turn to page 688 and examine the control answers

Second helping of "Sunshine"

Baby gets vitamin D from the sun, of course — but too much sun is harmful to young, tender skin. That's where White House Milk shines. For it provides that second helping of "sunshine" vitamin D_3. Yes, each pint of White House is fortified with 400 U.S.P. units of "sunshine" vitamin D_3. No other nationally known evaporated milk provides more. Creamy White House is also rich in each essential nutrient of fresh milk — and yet it's easier to digest. Remember — there's none better!

WHITE HOUSE MILK

There's None Better

400 U.S.P. UNITS OF VITAMIN D_3 PER PINT

MADE, SOLD AND GUARANTEED BY A&P

A&P

ACCEPTED AMERICAN MEDICAL ASSN

WISCONSIN ALUMNI RESEARCH FOUNDATION APPROVED FOR VITAMIN D UPON PERIODIC TESTS

NOT CONNECTED WITH ANY COMPANY USING A SIMILAR NAME OR BRAND

"BABY SHOES CAN BE DANGEROUS!"

Says Mrs. Jessie Tindall

This modern mother tells a typical Trimfoot story: When her son's shoes began to develop deep counter creases that irritated his feet and produced painful blisters, she bought Trimfoot Pre-School shoes. Here is what she says:

"Joe's old shoes showed deep counter creases. The irritation that followed produced large blisters on his heels. One day he was sent home from the nursery school because he began limping badly. Then I bought Trimfoot Pre-School Shoes. There have been no more blisters, and in more than four months of wear, there have been no counter creases."

Mrs. Jessie Tindall
St. Louis, Missouri

Counter Creases—Why Trimfoot Resists Them

Trimfoot Pre-School Shoes feature the patented "Cuddle-Back" heel construction. Instead of a two-piece counter such as is found in ordinary shoes, Trimfoot uses a single piece of fine, kid leather that runs from the sole to the top of the shoe. There is no gap to break down between the upper and the counter, and your child's foot is protected against the rubbing of rough inseams.

Write for the FREE BOOK "Care of Growing Feet." Address Trimfoot Company, Dept. 0-15, Farmington, Mo.

Trimfoot
BABY DEER SHOES
PRE-SCHOOL SHOES

Sex Determination

(Continued from page 659)

ceeded in showing that McClung's surmise not only had an actual basis of fact, but was just the reverse of the true situation.

In 1905, Dr. Wilson published the results of his investigations, in which he revealed that while two classes of spermatozoa were formed, in equal numbers, one with the extra X-chromosome and the other minus it, the ova all possessed the X-chromosome. Wilson then reasoned that by examining the cells of the developing zygotes, it should be possible to determine which combination of chromosomes gave origin to a male, and which to a female. It soon became apparent that when the spermatozoon with the X-chromosome fertilized an egg, an individual resulted with two X's and this developed into a female. When the spermatozoon that lacked the X-chromosome fertilized an egg, the resulting individual contained only a single X and became a male.

Since 1905, other investigators have shown that in other organisms, especially the higher types, all the spermatozoa contain extra chromosomes, but in one half of them, this is the X-chromosome, whereas in the other half, it is a different one, designated the Y-chromosome. All the eggs, however, possess the X-chromosome. Moreover, it has been established that when the spermatozoon with the X-chromosome fertilizes the ovum a female is produced, and when the spermatozoon with the Y-chromosome fertilizes an egg, a male is produced. In other words, the XX combination gives origin to a female, and the XY to a male.

In some organisms, notably chickens, fish and moths, sex is produced in a manner just the reverse from that which has been outlined. Here, fertilized eggs with either X or XY yield a female, while those with XX a male.

In recent years, it has been shown definitely that in human beings, sex is determined as in the lower forms, at the time of fertilization. In the somatic and immature germ cells of man, forty-eight chromosomes are encountered, and these are arranged in twenty-four pairs. In the male, one of these pairs consists of a large X-chromosome, and a smaller Y-chromosome; in the female, it consists of the two large X-chromosomes.

According to modern biology, sex is not dependent on the movements of the heavenly bodies, the feeding of special potions to expectant mothers, or any of the other external influences advocated by midwives, magicians, and similar specialists. It is a genetic phenomenon established at the time the individual is conceived. Whether the organism becomes a boy or a girl depends largely on the number of X-chromosomes which it contains: one X initiating a boy, and two X's a girl. Actually, the spermatozoon may be regarded as the all important germ cell in sex determination, for when one of these carrying an X fertilizes an egg, a female arises; when one that lacks the X, or contains a Y, fertilizes an egg, a male arises. Maleness or femaleness is thus immediately stamped on the developing organism as the result of the number of genes brought in by the X-chromosomes. The genes of a single X initiate a male, and those of a pair of X's a female.

And yet, in spite of all this, many individuals, including practical breeders, choose to believe differently. They remind one of the parents who are of the firm conviction that their obstetrician can tell them the sex of their expected babies through taking x-ray pictures, or counting the number of heart beats per minute. These are just about as accurate as the story of the doctor who built up quite a reputation of being able to predict the sex of unborn children. When an expectant mother asked him what her child would be, he would make a prediction. Then in a little book which he had handy, he would record the opposite sex to that which he had just indicated. If the doctor's guess turned out to be correct, then his patient believed devoutly in his uncanny powers, but if it was incorrect, and the mother protested, he would resort to his little book, and show her the exact notation. As a rule, this convinced the mother that perhaps she had been wrong, and that she just did not remember what he had told her. Accordingly, the doctor "never lost, he was always correct"—and the funny part of it was that he had most of his patients believing that way.

When the real facts are taken into consideration, nearly every one has approximately a fifty-fifty chance of guessing the correct sex of a child. If one does better than this ratio, he can establish quite a reputation for himself. In actuality, statistics reveal that among human beings, slightly more males are born than females, the figures being in the ratio of one hundred and five males to one hundred females.

At present, it is impossible to control the production of sex. Perhaps someday, science will discover the means of segregating the male producing spermatozoon from the female producing one, and thereby enable biologists to control the fertilization of the egg with one or the other of them. When that time arrives, it will be possible for parents to seek the aid of their doctor, and put in an order for their child, in advance, indicating their preference for either a boy or a girl.

Man's Dependency Upon Protein

In comparison with the plant kingdom, man's protein needs and metabolism suffer from a twofold handicap.

Plant cells require protein in their living processes, but are able to build or manufacture their needed protein from the nitrogen or ammonium salts which the soil supplies. By utilizing these simple inorganic salts, plants form amino acids, the building blocks of protein.

The human organism, in common with all other members of the animal kingdom, does not possess this ability, and if compelled literally to live on what the soil provides would undergo starvation.

In his daily diet, man must be supplied with protein; no other nutrient can act as a substitute. In other words, man's dependency upon protein is complete and absolute. But of equal importance is the kind of protein supplied. There are different types of protein, different because they consist of different kinds and assortments of amino acids.

Some of these amino acids, approximately eight, are so essential to human life that if a single one were persistently absent in the foods eaten, death would eventually ensue. These essential amino acids cannot be built by the human organism, either from inorganic salts or from other amino acids. They must be supplied as such in the proteins eaten, hence the need for the so-called complete proteins—proteins which supply all the essential amino acids. Not only must protein foods be eaten daily, but also the right kinds must be eaten, to supply the needed amounts of amino acids.

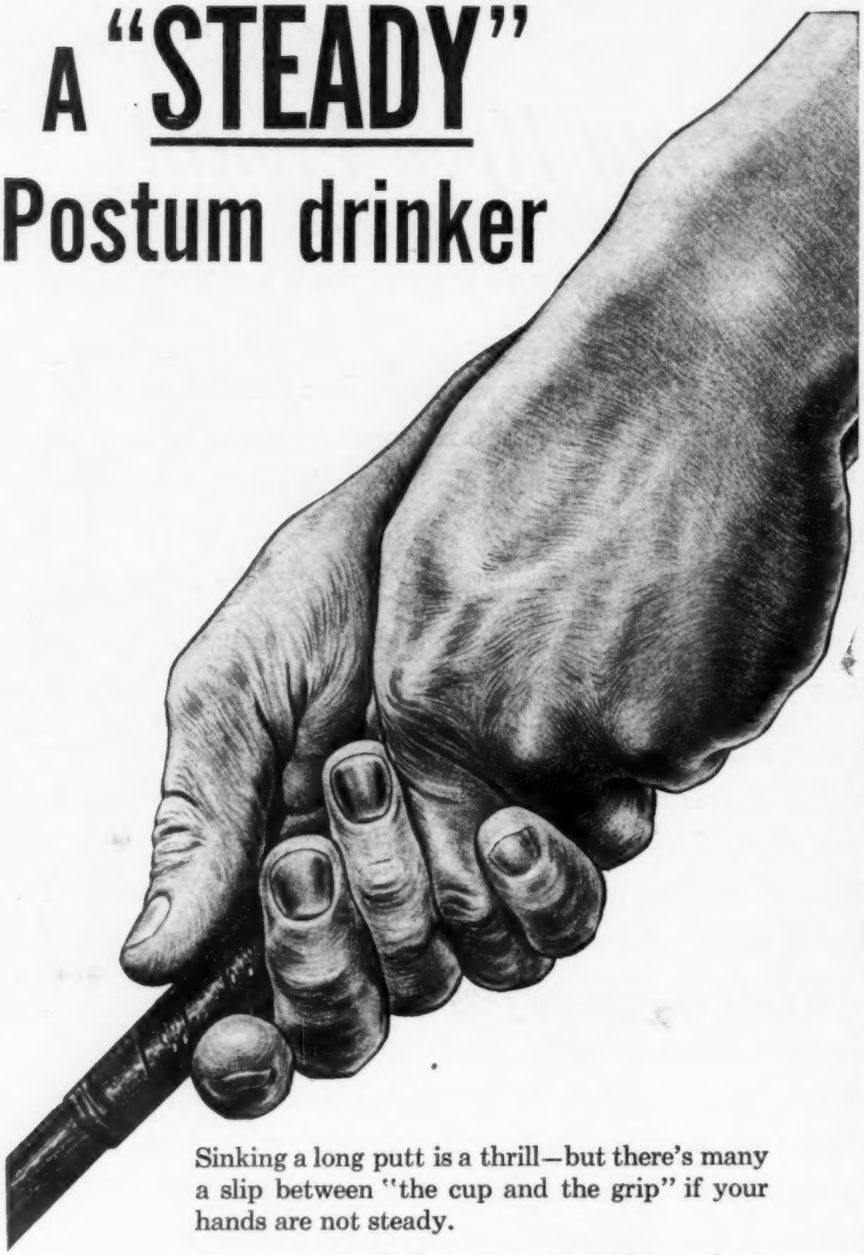
Meat ranks high among man's protein foods, both because of the generous amount of protein it contains and also because it supplies all the indispensable amino acids. All meat, regardless of cut or kind, provides protein of highest biologic value, applicable whenever protein is needed.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

AMERICAN MEAT INSTITUTE

MAIN OFFICE, CHICAGO . . MEMBERS THROUGHOUT THE UNITED STATES

A "STEADY" Postum drinker



Sinking a long putt is a thrill—but there's many a slip between "the cup and the grip" if your hands are not steady.

Here are scientific facts you ought to know about the caffein in both coffee and tea: Caffein is a drug! It is a stimulant that acts on the brain and central nervous system. Also, in susceptible persons, caffein tends to produce harmful stomach acidity. So, while many people can drink coffee or tea without ill effect, for others indigestion, nervous hypertension, and sleepless nights result*.

*See "Caffein and Peptic Ulcer" by Drs. J. A. Roth, A. C. Ivy, and A. J. Atkinson—A. M. A. Journal, Nov. 25, 1944.

Postum

TRY IT FOR 30 DAYS—
AND *SEE FOR YOURSELF*

Contains no caffein—no stimulants of any kind

High Blood Pressure

(Continued from page 665)

search. This was the demonstration that partial clamping of the artery which nourishes the kidney results in a persistent increase of arterial pressure that mimics the arterial hypertension of human beings. This clamping sets up a disturbance in the flow of blood through the kidney which stimulates the liberation from it of a substance called renin (*re*—as in Reno). Renin interacts in the blood with another substance (renin-substrate) to liberate a third compound, angiotonin. Angiotonin, or something chemically like it, then contracts the arterioles and increases the heart's effort. The result of its action is a sustained elevation of arterial pressure. Some evidence indicates that long-established experimental hypertension of this sort causes arteriolar damage of the type which may develop in human beings.

This accounts for the hypertension that may complicate certain types of kidney disease. It may also be the cause of some of the increase in pressure in patients with arterial hypertension whose kidney vessels are damaged. Damage to the arterioles of the kidney, although common in established and severe hypertension, is not found in the early and mild forms of the disease. It is still rather unlikely that we have accounted for the first elevations of arterial pressure in human beings.

Certain General Measures in the Treatment of Hypertension.

Hypertension causes symptoms in proportion to the amount of arteriolar damage and heart strain, and these arise late in the disease. Consequently, arterial hypertension is commonly accidentally found in the course of routine physical examinations in people who believe themselves perfectly well. Whether or not they will remain well depends on the ability of the arterioles and heart to stand up to strain and on the possibilities they may have of relieving it.

Every one knows that unpleasant emotions, whether from fear, anger or anxiety, may temporarily increase arterial pressure. Such unpleasant emotions can be buried alive in the depths of the mind. It would be easy to claim that a persistent increase of arterial pressure often arises from these suppressed emotional strains. But the evidence for this claim is incomplete, although in patients who already have arterial hypertension the importance of added emotional stresses in increasing pressure is well established. Those whose pressure is increased or who have a tendency thereto should try to relieve both the obvious and hidden strains of life.

The means vary with the person. Most obvious is the dispelling of fear and too often the fear is of the dis-

How To Raise Babies "Wholesale"

by Dorothy Wallin

Dorothy Wallin, Home Economics Graduate, Smithfield, Utah

Her husband and triplet sons

"Every mother with her first baby thinks she has her hands full. And she does. But when you get an average-sized family all at once as I did, you start thinking about ways to save time. Three babies can be raised at one time if you learn to conserve your energy.

"Feeding was a bothersome problem. We started out with small mouthed nursing bottles which took forever to clean. I simplified my feeding operation when we switched to modern Evenflo Nursers. Their wide-mouth bottles are easier to clean and to fill.

Air valves relieve vacuum, prevent collapsing.

"I prepare the formula and fill 18 Evenflo Nursers each morning and seal them with the nipples down for the day's feeding. They are stored in the refrigerator ready for use. The air-valves in Evenflo Nipples help my babies to nurse evenly and in comfort.

"We brought our babies home from Detroit to Utah by plane. Having their food all ready and sanitarily sealed in the Evenflo Nursers made it easy to feed them in flight. The hostess on the United Air Lines plane assisted and we got along fine."

Nipple down, bottle sealed. Nipple up for feeding

Evenflo

Modern Nurser 25c

(Separate Nipple, Bottle or Cap—10c)

America's Most Popular Nurser

Note to Mothers of Older Babies

It is still hard to supply the great demand for modern Evenflo Nursers. If your baby is past the nursing stage, perhaps you would care to pass your Evenflo Nursers along to a young mother unable to get them.

The Pyramid Rubber Co.
Ravenna, Ohio

THE New Freedom BRA
Extra Comfort
FOR NEW MOTHERS
Wearing a New Freedom Bra is a new experience in comfort, especially for nursing mothers. All New Freedoms have the exclusive CONTROLLED UPLIFT feature which permits fractional cup adjustment up or down. At better stores in sizes, small, medium, large, from $1.75.
TRE-ZUR BRASSIERE COMPANY
407 East Pico St., Los Angeles 15, California
Always TRE ZUR Lovely contours

Styled for Baby's Comfort In Any Season.
The new extra-lightweight by Hartman with the famous "Floating Ride"—Windowed cowl curtain. . Roomier
Hartman Baby Carriages
Floating Ride
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HARTMAN
MANUFACTURING CO.
1300 South 13th St., St. Louis, Mo.

ease. This is not to be countered by running away from it, for it will follow, or by avoiding examination and treatment. The first attack on this fear is a competent examination. This consists in a search for any of the known causes of hypertension. If none of them are found, in an evaluation of the state of the organs whose vessels the disease most often affects, namely, the heart, the brain and the kidneys. This is followed by a continued program of observation to determine the effect of the strain. Such a program should result in a close estimate of the patient's condition. It should enable him to adjust his life to his possibilities and should also rob the unknown of its terror.

Symptoms of the most varied sort may be present in some, both from and before the first elevations of arterial pressure. These conglomerates of nervousness and fatigability are not the result of vessel strain, but the expressions of emotional stress in meeting the ways of life. Whether or not they should be countered by a program of psychotherapy depends on their degree. Probably because the elevations of arterial pressure are intermittent rather than persistent in some such patients, they may never have any evidences of unusual vessel strain.

Then comes the question of diet. It was once taught that meat, particularly red meat, increases arterial pressure. The evidence, such as it is, is not convincing. A normal intake of meat of any sort is quite without effect on arterial pressure.

Excess fat increases pressure, adds to the strain on the heart and shortens life. This is not the fat the patient eats. Rather, it is the excess he carries around with him. The problem of diet in hypertension is therefore solved by moderation and, in the presence of obesity, by deliberate, slow reduction of body weight to a level preferably a little less than normal for the patient's height and age.

In certain acute states of kidney damage, excess salt increases blood pressure. In some forms of heart disease even a normal intake of salt increases the burden. But in uncomplicated hypertension, a normal intake of salt does not increase arterial pressure or heart work. Severe salt lack may be associated with a decrease of arterial pressure, but such a state is only attained by stringent restriction.

The question of vitamins may be disposed of by stating categorically that no known vitamin has been shown to reduce arterial pressure in this disease.

Operations are performed for the relief of arterial hypertension. They consist in severing many of the nerves which stimulate blood vessels. These nerves belong to a group called the "sympathetic nervous system" and the operations are known as "sympathectomies." Selection of patients for these operations and the performance of the operations alike demand great skill. In many patients the operations can do no good, and may entail only useless expense and invalidism. In others, particularly those whose disease is of short duration, pressure may fall postoperatively to nearly normal levels for long periods and in others, symptoms such as headache and heart pain may be relieved. No promise can be made as to the result of an operation in any one patient, so that the risk, which is small, and expense should be weighed against probable benefit. Parenthetically, it may be noted that the exact means by which the operations sometimes do their good is not known.

We once compiled a list of drugs which have been used for the relief of hypertension. It included about eighty and was not complete. Most of these are now in disuse or are forgotten. Their number and variety is due largely to the fact that wide variations of arterial pressure often occur without apparent cause. Because of this variability, the inadequate study of the effect of any substance may lead an honest observer to the mistaken belief that the drug is helpful. The few drugs that remain include principally mild sedatives, which tend to relieve some of the nervous strain so common in hypertensives. Another is known as thiocyanate, which principally relieves headache. It should be taken only under close supervision of the physician.

Sooner or later the question comes up about knowing one's blood pressure. We do not believe that it is useful for the patient to know it. Some people will not brood over minor variations of blood pressure because they wisely don't care, having placed their confidence in their medical adviser. Others will be disturbed over minor variations that the physician recognizes as inconsequential. Since this increases anxiety and tension, they should not know the day to day levels of pressure. It should be made clear at the beginning that blood pressure measurement is only one part of the general examination and that without being considered in the light of the latter has only limited and often misleading significance.

Finally, what is the outlook for the hypertensive? Hypertension is still our greatest enemy and not much is being done about it. Ultimately, granting the continuance and expansion of research, the picture is encouraging. At the moment, the outcome is a matter of individual assessment. It may be discouraging to know that there is no magic, no sure cure of the disease. But it should be and is encouraging to thousands of patients to know that an understanding of their problem and attention to its management can make their lives productive, pleasant and prolonged.

Though the Leisure Hours of Summer Vacation are Gone

During the summer vacation, when leisure time is plentiful, children eat unhurriedly, and consequently partake of fuller, nutritionally balanced meals. As the new school year begins, the daily routine which must be adopted requires earlier awakening in the morning to allow enough time for dressing and breakfast. All too frequently, however, children are prone to sleep until the last moment, giving themselves too little time for these essential duties.

For the sake of the child's health and nutritional state, the better eating habits developed during the summer months should be continued after school has begun. The child who skimps or skips breakfast is not alert in the classroom, and usually makes poor scholastic progress.

Nutrition authorities are agreed that the breakfast should provide from one-fourth to one-third of the daily food needs. To accomplish this, a basic breakfast pattern has been proposed which consists of fruit, cereal (ready to eat or to be cooked) with milk, bread or toast and butter, and beverage. The cereal serving of this breakfast is an important part of the meal, supplying high quality protein, caloric food energy, B complex vitamins, and important minerals. The large number of cereals available permits a different one to be served daily, making for variety and taste appeal. The nutritional contribution made by the cereal serving, consisting of 1 ounce of cereal (whole grain, enriched, or restored to whole grain values of thiamine, niacin, and iron), 4 ounces of milk, and 1 teaspoonful of sugar, is indicated by this table of composite averages:

Calories	**202**
Protein	**7.1 Gm.**
Fat	**5.0 Gm.**
Carbohydrate	**33 Gm.**
Calcium	**156 mg.**
Phosphorus	**206 mg.**
Iron	**1.6 mg.**
Thiamine	**0.17 mg.**
Riboflavin	**0.24 mg.**
Niacin	**1.4 mg.**

The presence of this seal indicates that all nutritional statements in this advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

CEREAL INSTITUTE, INC.
135 SOUTH LA SALLE STREET • CHICAGO 3

AN INVITATION TO BEAUTY

We cordially invite you to discuss your beauty potential with the Cosmetic Consultant who distributes our products in your community. Beauty, we feel, is an intimate subject—one that is best discussed in the privacy of your home.

Too often, we are inclined to take ourselves for granted. It somehow escapes us that our outward appearance reflects our personality, our individuality, our ideas; that it is wonderfully adaptable to change, to improvement. We have a tendency to regard our physical aspects for all the world as though they were the drapes in the living-room which we intend to change one of these days, when we get around to it, for something more up-to-date and colorful. We put it off and put it off—and why? Could it be that the inertia of habit is hard to overcome? Could be.

An intelligent self-appraisal is a tonic for the soul; and since Spring is the legendary season for tonics we feel that such an appraisal is definitely indicated.

Seeing ourselves as others see us helps immeasurably to arrive at that all-important detached viewpoint without which the art of self-improvement is greatly hampered. And it is here that the Cosmetic Consultants who distribute our products can be of real service to you; for, in effect, you see yourself through their eyes, aided by our Selection Questionnaire which, as it is answered, unfolds a word picture of your type and condition of skin and of your coloring, viewed cosmetically.

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Luzier's, Inc., Makers of Fine Cosmetics & Perfumes

KANSAS CITY, MO.

Answers to

Antisocial Child

(Continued from page 680)

1. Study of the cause and effect may help in diagnosing symptoms of antisociability. It is axiomatic that to effect a cure the physician must know the cause of the ailment. Study the cause of the lack of sociability on the part of your child. You will see the direction the cure should take.

2. Antisocial attitudes are of several types: (a) domineering, (b) dictatorial, (c) aggressive, (d) exhibitionist, (e) belittling of others and sarcastic. You must ascertain what type of antisociability the child is heir to before you attempt to apply a cure.

3. Sometimes a child is retiring because of the feeling that he cannot contribute anything to the group and therefore considers himself unwelcome. Show the child that he has something to contribute to society and he will grow to feel that he is one of the social group.

4. If a child feels that other members of the family "gang up" on him, that's the time "when a fella needs a friend." Stand by your child when he feels he is all alone. Let him know that always he has one friend whom he may call on for solace in time of distress.

5. Many a complex that mars a child's entire life has its roots in some unpleasant experience during early childhood. Retrace the years and locate the unpleasant experience and try to eradicate the memory.

6. Cure for sorrowful memories is to surround the child with an abundance of happy hours. If you endeavor to let him "forget it" through the years, you may find that the memory lies deeper than you suspect.

7. Often the timid child feels that the world is a Giant Colossus, bent on frightening him. To show the Colossus that the child does not fear it, many a child will put on a mask of aggressiveness. It is the parent's duty to convince the child that he need not don a mask of indomitability to be able to get along with people.

8. If you play favorites and shower your attention and affection on one particular child you may make the other child lonely! Share your affection with all your children.

9. If one of your children has a tendency to dominate each situation show him that you see in him elements of personal excellence. A domineering child is saying to the world, "I'll make you want to play with me." Show him that his playmates as well as you recognize and acknowledge his personality assets and that he has no need to be domineering.

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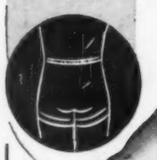

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10. If you aim to make him into a "good boy" in one lesson, look out! You are asking the child to do the impossible, too heavy a load for a little fellow. Ease him along, show him what is expected of him. Do it, however, gradually and with evident affection and patience.

11. Many of our national leaders "got that way" when they joined a club in their young days. Associating with other children, they developed a liking for people and mutual understanding. Help him find a suitable club.

12. Leadership grows with practice. Give your child all the possible opportunity to show his leadership. If that is his strong point help him to make it stronger.

13. Children whose playmates are about their own mental age usually develop evenly and serenely. A child gets a distorted view of things when he associates with either younger or disproportionately older playmates.

14. Getting along with people is an art. Some children mature with a feeling that they have to fight the world for everything they require. When they realize they can achieve as much if not more through cooperative efforts and friendly approaches, life will be easier.

15. A child who associates with inferior friends will soon grow to feel that the world is peopled by mental pygmies. This will cause him to give himself a higher rating than the world is ready to grant him. To avoid this himself, have him mingle with children of his own mental status.

16. People whose philosophy of life is to use others for their selfish benefit soon find that their friends, like the Arabs, fold their tents and "silently steal away." Train your child to feel that ours is a mutually helping world of give-and-take, and not merely "take."

17. The world is stronger than any individual in it. Society sets up standards of behavior that individuals must meet if they are not to be considered "beyond the pale." Teach your child to "accept" society lest he seek an outlet in delinquent propensities.

18. Even children are aware that the only way to have a friend is to be one. Help your child not merely to know this theory but to put it into living practice.

19. When your child shows a Let-George-do-it attitude, tell him he is George! Laziness has no room in a child's makeup. The cure for laziness is to make the child realize that doing things is both pleasurable and profitable.

20. When a child is part of a family circle that is courteous and cooperative he will no more be able to resist growing into a social being than can the flower close its petals against the sunlight and dew.

Pregnancy

(Continued from page 667)

himself," said Marion. "The last time we mentioned him he was only three layers of cells stacked one on another like three pennies."

"I don't know quite how detailed to make this," explained Dorothy, "and in the beginning I think we will cover only the high spots. Later we can enlarge it a bit.

"We have, as Marion said, three layers of cells. They look alike but actually they are different and each layer of cells develops into specific parts of the baby. They grow and develop simultaneously but to describe what they do we will have to talk about them one after another.

"The upper layer, known technically as ectoderm, begins its original growth slightly ahead of the others. It eventually forms the brain, spinal cord and nerves and the skin covering the body surface. Down the center of this round flat layer a little hump forms, like the elevation after you have rounded the earth up over a row of seeds. Almost immediately a groove forms down the center of this hump. It becomes deeper, the upper edges lean toward each other and the two upper edges gradually grow together. They detach themselves from the layer and form a tube that lies under a flat layer of cells. This upper sheet of cells spreads out to form skin. The underlying tube soon closes at both ends. Then one end begins growing faster than the remainder. It becomes larger and thicker and develops several bulges. This tube will become the nervous system—the bulges in front will become the brain, the remainder will form the spinal cord. Small projections grow out from parts of the brain and spinal cord, and these are the nerves. Just like that, and you have brain, spinal cord and nerves produced."

"Is that all there is to it?" asked Betty. "Just a little hump, a little depression, a little curling up and there you have a tube formed. Then a little swelling in one part, a little stretching in another part, a few outshoots and you have brain, spinal cord and nerves. I've learned that lesson. What happens to the bottom layer?"

"The bottom layer, known as entoderm, does much the same thing. Part of it rolls up and forms a tube; this tube becomes the gastrointestinal tract—the mouth and the esophagus and the stomach and all of the intestines. Originally it is the same length as the tube derived from the ectoderm, but it soon grows more rapidly, particularly in the portion beyond the stomach. This part becomes the intestines and it grows disproportionately long so that it becomes folded—you know how coiled the intestine is within the abdominal cavity.

"This entodermal tube also forms

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several other important organs in addition to the stomach and intestine. They develop originally as small buds growing out from different parts.

"Near the front end, which eventually becomes the mouth cavity, a small outpocketing appears almost as soon as the tube becomes closed. This grows a little and divides into two branches. Each of these branches divide over and over and presently we see that this original outgrowth has developed into the trachea, commonly known as the windpipe, and two lungs. There is always a connection in the back of the mouth between the trachea, which leads to the lungs, and the esophagus, which leads to the stomach. Normally during the act of swallowing the opening into the trachea is closed off by a little curtain called the epiglottis. You know how easy it is to choke if you laugh while you are drinking. This is because laughing raises the epiglottis and liquid or food enters the trachea as well as the esophagus. Anything entering the trachea plugs and irritates it and you cough violently trying to expel it.

"From the region immediately below the part that will develop into the stomach two more outgrowths appear. These become the liver and the pancreas, both of which are almost as intimately concerned with the digestion of food as the tube from which they arise.

"They also grow by means of branching—thousands of branches are formed in each case. No matter how many branches there are, they always retain their hollow character. The channels inside the liver cells carry bile and empty it into the intestine through the main bile duct. A little secondary bulge on the wall of the bile duct becomes the gall bladder, where bile may be temporarily stored.

"A similar system of channels is present in the pancreas and is used for the transmission of pancreatic juice to the intestine."

"If I had some clay or some plastilene," said Betty, "I could model what you have told us and we could actually see it."

"That is a wonderful idea," said Dorothy, "why don't you do it?"

"Let's go on," interrupted Marion. "So far we have brain and spinal cord and nerves, stomach, intestine, lungs, liver and pancreas. What about the heart and kidneys and skin and arms and legs?"

"We haven't yet talked about the middle layer of cells and many of the things you have just mentioned come from that layer," answered Dorothy.

"While the upper and lower layers have been developing into tubelike structures, the middle layer has been forming small masses of cells that are close together, like beads on a chain or the knobs on a spool bed. There are two strings of these masses and originally they run lengthwise near the sides of the tubes. These solid masses become larger and form different structures. The part that lies nearest the two tubes will produce the bones of the spinal column, and the part a little further out will become the muscles of the trunk; another part will bulge out and form part of a temporary kidney, and other parts will contribute to the formation of arms and legs.

"Did you know that the baby develops two sets of kidneys before it finally produces the third which persists throughout life?"

"That seems a needless waste," said John. "Why doesn't it develop the third kind first?"

"The kidney," responded Dorothy, "is one of many parts of the body that do the same sort of thing. Some of the best evidence for the fact of evolution—you notice I say 'fact' and not 'theory'—lies in the changes that occur in the body early in the course of development while it is gradually acquiring the appearance it will have at birth. Why should it form three sets of kidneys? As man has evolved during the course of millions of years, he has never stopped producing, during the period of early intrauterine growth, the kind of kidneys that were satisfactory for the body's needs millions of years ago. Certain lower animals use throughout life the type of kidney that is present in the baby for only a few weeks. As far as the baby is concerned, these early kidneys never function and soon disappear."

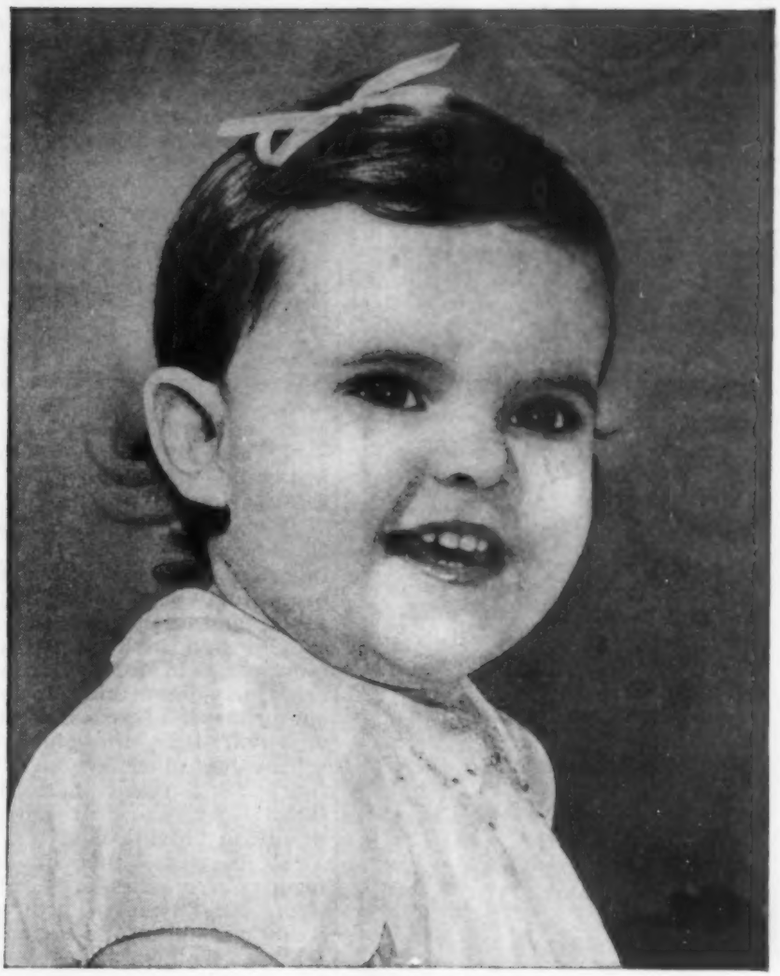
"Are there other parts of our anatomy besides the kidneys that are remnants of previous stages of existence?" asked John.

"Many of them," answered Dorothy. "Take the appendix, for instance. Most of us know of its existence only because it occasionally makes trouble. It has become a small unused organ without function in man, but in some animals it is an actual working part of the digestive apparatus.

"By the time of birth many of the structures that are reminiscent of previous stages of life have disappeared—like the kidneys we have just talked about. Some day I will show you a picture of an embryo (the infant during the first two months of development is designated by this term) at about 28 days of age. It has gill slits, something like those found in fish, and a tail, and in general it little resembles a human being. If I were to show you pictures of a fish and a bird and a cat and a cow at stages comparable with the 1 month stage in man I am sure you could not tell the difference. They are so similar that it takes a trained observer to distinguish the differences.

"Let's see—it was the kidney that started this discussion, wasn't it? The organs of reproduction are developed in close association with the preliminary kidneys and parts of these first kidneys are actually con-

Her father's a Doctor—



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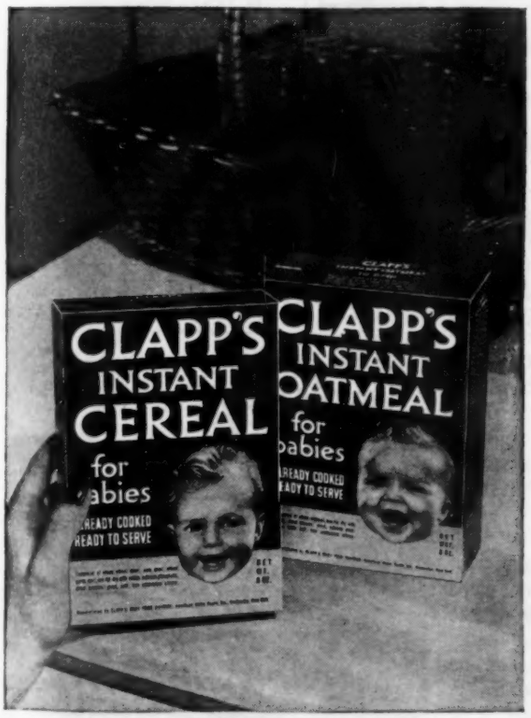

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verted into some of the internal parts of the sexual organs. Early development of the sexes is identical. The internal organs appear almost exactly alike for about two months. The external development remains indistinguishable for still another month. The same structures are originally present in both sexes, but they gradually differentiate in one way if the baby is destined to become a boy, and in another way if it is going to become a girl."

"How does it know whether to develop into a boy or a girl?" interrupted Betty. "Is there any way of being sure your child will turn out to be one or the other?"

"I know little Hiram is a boy. I just willed it so, and he has to be," said Marion.

"I hope you are right," answered Dorothy, "but actually, sex is inherited. I told you before that everything was inherited through genes, and that these genes during cell division are collected into chromosomes. In human beings there are forty-eight chromosomes—one complete set of genes in one group of twenty-four, the other complete set in the other group of twenty-four. As a result there should be twenty-four pairs of chromosomes practically identical in size.

"It happens, though, that only twenty-three pairs are of the same size. The twenty-fourth pair are sometimes alike and sometimes different. If they are different it is because part of the genes are lacking in one chromosome and consequently it is only half as large as the other forty-seven.

"When the members of this twenty-fourth pair of chromosomes are the same size, the baby develops into a girl, when half of one chromosome is lacking, the baby becomes a boy.

"Let me explain it so that you can understand a little better. We designate the chromosome of this twenty-fourth pair that resembles the other chromosomes by x, the one which is short and only about half size as y. All women have a twenty-fourth pair which is xx. Men have a twenty-fourth pair which is xy. When the pairs separate in the final cell division, preparatory to making a mature ovum or spermatozoon, one complete set of twenty-four goes into each of two new cells. Consequently each of the two final female cells will have twenty-three chromosomes and an x chromosome. In the two final male cells one will have twenty-three chromosomes and an x chromosome, the other will have twenty-three chromosomes and a y chromosome.

"If a spermatozoon bearing a y chromosome unites with the ovum there will be twenty-three pairs plus an xy pair; if a spermatozoon with an x chromosome unites with the ovum there will be twenty-three pairs plus an xx pair. Half will be girls, since their twenty-fourth pair of chromosomes is xx, the other half

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will be boys since their twenty-fourth pair is xy."

"You mean," asked Betty, "that the mother actually has nothing to do with the baby's sex and that the sex of the offspring is entirely determined by the father?"

"That is about it," replied Dorothy. "In spite of the fact that the father's cells determine which it shall be, he is unable to control the process. As far as we know there is absolutely no way that any two human beings can control the sex of their child."

"It is a comfort to know that," said Marion. "After all the years men have berated their wives for bearing them female children, it now turns out that the women had nothing to do with it."

"Clever, I'd say," said John, "how our bodies develop."

"Indeed it is," Dorothy went on. "But let's continue our discussion."

"So far we have a bunch of organs and a backbone and a few muscles, but no skin or arms or legs or face. How do these become part of the picture? " asked Bob.

"The skin comes from the same layer that produces the brain and spinal cord and nerves. After the upper edges of the depression meet and fuse to form the tube that becomes brain and spinal cord, the tube is completely cut off and lies beneath the surface. The edges of the upper layer grow together at the place where the tube was detached. The outer edges then swing down and under to enclose the structures that have been growing from the other two layers—the stomach, intestine, liver, heart, lungs and so on. The two edges join each other on the under side so that the entire group of developing organs is completely enclosed by this outer layer, which is known as the epidermis or outer layer of the skin.

"Near the front end of the embryo on its under surface there are five transverse lines where the skin becomes attached to the tube which is developing into the gastrointestinal tract. In all animals which live under water these same points of attachment are formed and break through to form the gill slits. In the human embryo none actually break through, but they contribute to the formation of various parts of the head and neck.

"The mouth is formed when a break occurs in the place where the front end of the entodermal tube touches the skin. The nose develops in the flat smooth skin just above the mouth, and the eyes appear above and to the sides of the nose. The eyes come from two sources. The inner lining of the eyeball—the part that receives the visual images—and the optic nerve that transmits these images to the brain, develop as a little bulge on each side of the brain. The bulge becomes cup-shaped and a button-like thickening of the skin over this area is pushed into the cup. This button-like thickening becomes the lens of the eye—the part

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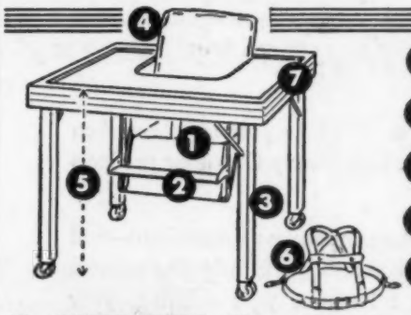

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that permits us to focus. The cup-shaped portion that comes from the brain forms the retina, the inner lining of the eye that receives the images. The outer covering of the eyes and the eyelids are formed from the skin in the vicinity.

"The ears, like the eyes, are derived partly from the brain and partly from the skin. The inner part, which receives the sound waves after they are transmitted from the ear drum, comes from a little elevation on the brain similar to that formed in producing the eye. The remainder comes from the skin. In addition to the gill-like structure that helps form the mouth there is one other that does not entirely disappear. The two outer edges of this form the outer part of the two ears."

"Then our mouth and ears actually correspond to gill slits in fish?" asked John.

"They don't actually correspond, but they are really formed from the same primary structures."

"Little Hiram still doesn't have arms and legs. Where do they come from?" asked Marion.

"They develop soon after the skin has covered the body. They are first described as four tiny buds. These become longer and flipper-like in character and gradually divide into three short portions which, in the upper pair, will become upper arm, forearm and hand, and in the lower pair, thigh, leg and foot. As growth continues the cells in the center condense into bone and those around them become muscle. The skin grows to keep pace and keeps the inner parts covered."

"How about hair—and finger nails?" Betty wanted to know.

"Hair and finger nails are specialized parts of the skin. All over the body groups of cells form tiny pockets in the skin. Each group secretes a substance that is pushed out and beyond the surface. These are the hairs. Over most of the body they are almost invisible and only in a few places are they longer or thicker.

"Finger and toe nails are formed in much the same way except that they require larger groups of cells and the substance they secrete is in the form of a sheet instead of little round hairs."

"Oh, it's all too wonderful," said Marion. "To think that in nine months a well formed baby can come from two single cells. And I want to know where little Hiram is right at this moment. Does he have gill slits? Is he covered with skin yet?"

"Yes, he is covered with skin and the gill slits have long since disappeared. Practically everything I have described to you occurs in the first month or six weeks of life. Usually by the time a woman knows she is pregnant these stages have been completed. By the end of two months the embryo is remarkably well formed. It has eyes, ears, nose and mouth; the arms and legs are

PATIENT'S IMMUNIZATION REMINDER

Your Baby has been vaccinated against

Diseases	Date Immunization Completed	Result	Product Used	See Your Physician Again on
Smallpox	June 1 '46*			Sept '51
Diphtheria	Sept 3 '46*		See Below*	Oct 15 '46
Schick Test				
Whooping Cough	Sept 3 '46*		See Below*	Sept '47
Scarlet Fever				
Dick Test				
Tetanus	Sept 3 '46*		See Below*	Sept '47
Typhoid				

Smallpox (Vaccine Bovine) treatment administered on ____ by Dr. Barclay M.D.

* Diphtheria-Pertussis Tetanus-Antigens Combined.

A 26% increase in diphtheria is shown by government records of cases reported during the first four months of this year. Doctors urge immunization of every child.

This card may Save Your Baby's Life!

DIPHTHERIA...

a shameful increase this year

● This year will be the *worst* diphtheria year—in the number of cases reported—since 1939, if the present trend continues.

The tragedy of this increase is that diphtheria can be so easily *prevented*—by immunization. If *all* babies and little children were immunized against diphtheria, this dreadful disease could be *wiped out.*

Has *your* baby been immunized against diphtheria?

If not, *you are taking a dangerous risk.* Diphtheria's highest death rate is among little children—*under five.*

If your baby is six months old or over—and has not been immunized against diphtheria—consult your doctor *at once.* He will see that your baby is protected *now,* and—for *future* safety—he will give you the *Immunization Record Card.*

This card tells you when

With this card, you will know just *when* to take your child to the doctor—for the immunizations needed for protection, not only against diphtheria, but against *other* preventable diseases.

No busy mother can *possibly* keep track of all this herself. Immunizations against different diseases are given at different ages . . . some diseases require repeated immunizations . . . safety periods vary! And if you forget one single immunization, you may endanger your baby's safety—*even his life!*

Don't trust your memory. Join the Mothers' Immunization Reminder Club, which now totals over 3,281,000 members. All you have to do is ask your doctor for the *Immunization Record Card.*

Sharp & Dohme supplies these cards to physicians free upon request. They are in two parts—one for the *doctor's* records and one for *you. Get this card from your doctor today! Keep it where you will see it at least twice a year.*

• • •

FREE! New immunization booklet. Gives the facts about contagious diseases your child might get . . . their special danger for babies . . . their harmful after-effects. Find out how to prevent *your* children from catching these diseases.

Write today for your **free** copy of this immunization booklet to: Sharp & Dohme, Philadelphia 1, Pa., Dept. H9-6.

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Four Times More Useful

WARMS BABY'S BOTTLE
BOILS EGG OR POTATO
COOKS BABY'S FOODS
VAPORIZES FOR COLDS

Gleaming white porcelain with patented "Longlife" heating element that automatically shuts off when water is evaporated. Safe, sanitary; wash with the dishes. No wires to short circuit. AC current. Uses standard appliance cord.

ELECTRIC STEAM RADIATOR CORP.
Detroit 8, Michigan

already divided into three sections and even the fingers and toes are visible. The brain, stomach, intestine, liver, heart, lungs and the final kidneys are all there.

"If little Hiram is to be born before the first of July he should be about 5 inches long now. I did bring along one picture tonight which you may have, Marion, if you wish. We'll label it 'Little Hiram, age 4 months.' Here it is."

"Oh, Dorothy! Is this really what he looks like? He is actually human. I thought probably he would not be beautiful being so young, but this is sweet. May I really have it?"

"Yes indeed. And now I must go home. Talking about all of this and seeing Marion and Betty planning to have a baby makes me almost wish I were going to have one myself."

"Why don't you have one, Dorothy?" began John.

"What a question for you to ask, John. Babies generally have fathers, you know."

"I didn't mean it that way. You didn't let me finish. What I started to say was, why don't you find yourself a nice husband and have one?" finished John.

"The man who wanted to marry me and the man I wanted to marry never seemed to be the same one at the same time, somehow. Now I am a confirmed spinster and for the most part have my maternal instincts satisfied by playing auntie to my friends' children. It is only on rare occasions like this when I see people so much in love and about to have a child that I have any regrets about my state of single blessedness."

"Don't you worry, Dorothy, we are going to have you married off yet. We are great fixers and if you don't believe it wait and see."

The next instalment of "Pregnancy" will be carried in the October issue of HYGEIA.

SAFE WATER

(Continued from page 675)

frontiers of settlement has long preoccupied official thinking in the countries to the south. Just as important in more recent planning is the need for healthy, alert manpower to direct growing light industries.

Other developments emphasize the importance of the water supply problem. Latin America has been outgrowing its old cities. The population of the southern part of the hemisphere may remain small in comparison with its huge land mass—nearly three times that of continental United States—but it has doubled since 1900.

New settlements, such as Tingo Maria, Peru, are being founded across the Andes Mountains, at the approaches to the Amazon Valley. Cities that have recently become industry centers are receiving hundreds of new residents as workmen and their families move in from agricultural areas.

The war served both to heighten the problem and hasten its solution. To win the struggle, the allies needed rubber, oil, tungsten, tin, copper, manganese, chromite, mercury, quartz, antimony. They needed quinine and quebracho extract, henequen and abaca, rotenone and vegetable oils. Some sixty-three strategic materials had to be gotten out in sufficient volume and quickly. Men had to go where they could be produced. Absentee rates of 25 per cent or more from sickness had to be reduced if the job was to be done.

United Nations soldiers also had to man strategic areas. Thousands of young North Americans were funneled through South America on their way to the war zones. They had to be protected against disease that might have kept them from the front lines.

To keep the supplies flowing and the planes flying, North American and Latin American physicians and engineers joined forces. They set up the Inter-American Cooperative Health Services in conformity with a demand for better hemisphere health contained in a resolution of the Rio de Janeiro Conference of foreign ministers held in January 1942.

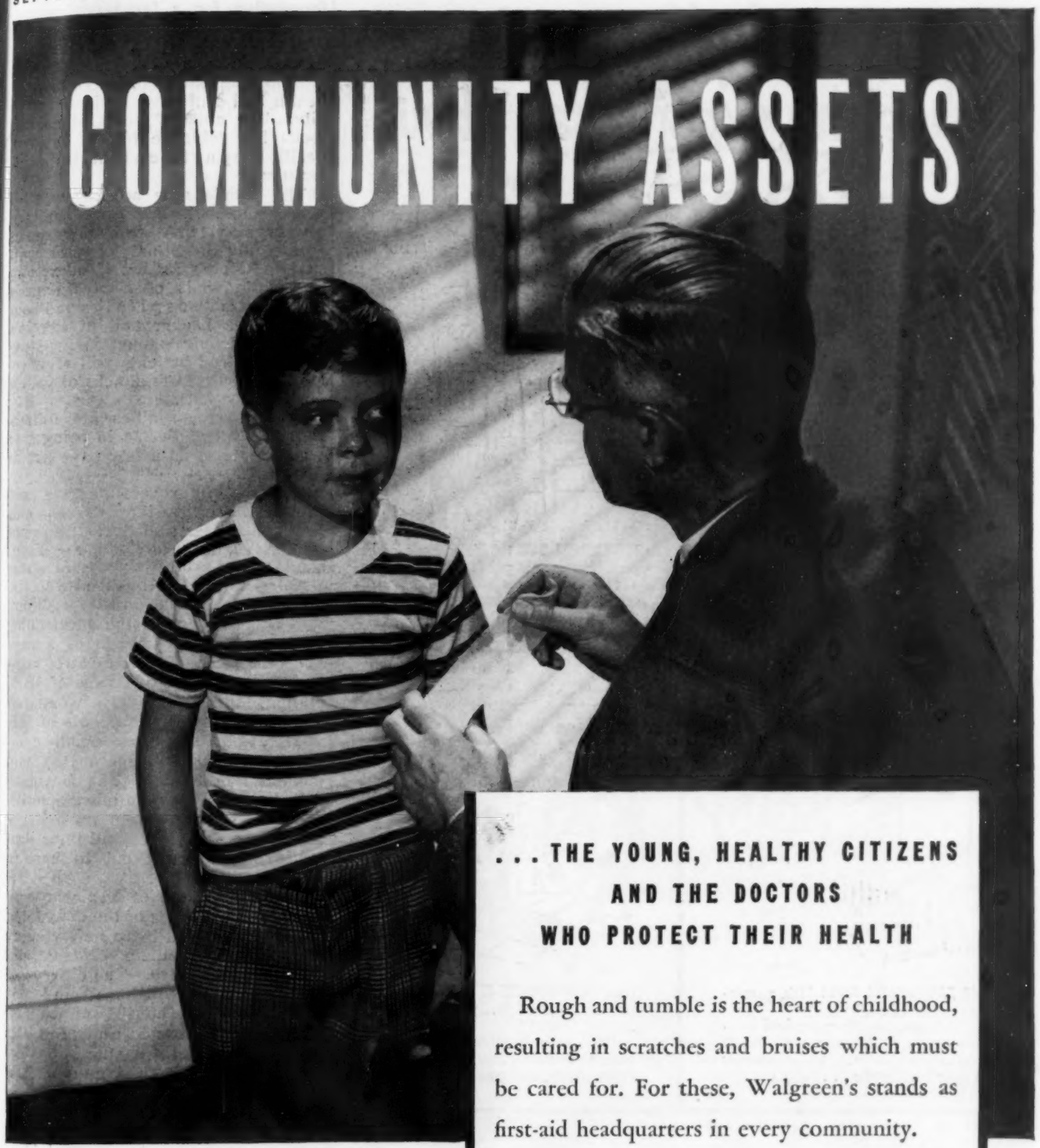
The doctors treated diseases in strategic areas. They recognized immediately that an ounce of prevention is worth a pound of cure—especially where safe water supplies are concerned.

Typical of the cities where safe water systems are now at work is Perote, in Mexico. Perote, a city of about four thousand people, is located on Mexico's most vital trade artery, the Mexico City-Vera Cruz highway. Its public water system, built more than two centuries ago according to the colonial pattern, was no longer safe nor adequate.

Mexican sanitary engineers from the national health department and United States doctors and engineers from the Institute of Inter-American Affairs devised a plan for modernizing the water system. Perote citizens were extremely pleased and proud of the result. To a man, they turned out for the solemn dedication ceremonies when the new system went into service. The governor of Vera Cruz state, Senor Ruiz Cortines, the energetic and widely loved Subsecretary of Health and Public Welfare, Dr. Martinez Baez, and the chief of the Institute health field party told the people just what the achievement meant in terms of their health and economic development.

The citizens of Perote listened—and thought. They have not been content merely to sit back and admire their modern, efficient water system. They saw it as the solid

COMMUNITY ASSETS



. . . THE YOUNG, HEALTHY CITIZENS AND THE DOCTORS WHO PROTECT THEIR HEALTH

Rough and tumble is the heart of childhood, resulting in scratches and bruises which must be cared for. For these, Walgreen's stands as first-aid headquarters in every community.

In case of serious injuries, the community calls upon the Doctor, who may prescribe. When he does, turn to your neighborhood Walgreen Drug Store which is always fully stocked with pure, fresh, potent drugs to fill every prescription he may write.

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(*Yodora has been accepted as an advertiser in publications of the American Medical Association.*)

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(*Yodora carries the money-back guarantee of the Good Housekeeping Institute. Why not get Yodora . . . and discover its pleasant effectiveness . . . today.*)

THE WOMEN-WHO-USE-IT SAY: "It gives powerful protection...yet it's so soothing and lovely!"

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foundation for a far reaching and effective city health program. A democratic "Junta de Agua Potable" has taken charge of water rents, and is applying them to a variety of health and sanitation projects in the city. The citizens' junta, of course, looks for guidance to the national health department in technical matters.

The people now are enthusiastic over completed plans for a sanitary sewerage system—the next step in eradicating intestinal diseases and saving Perote's babies. Today, too, the white walls of a big, modern tuberculosis hospital stand out against the background of Perote's black, volcanic mountains. Some three hundred patients will recuperate there, safe from attacks of waterborne infections.

Other Mexican cities are following the lead of Perote in using safe water systems as a basis for health programs.

But the improvements are not limited to cities like Perote, and Iguala, and Tierra Blanca, with populations running up into the thousands. The protection of safe water supplies is being brought also to the people of remote and "forgotten" villages. Remember the spectacular eruption three years ago of a new volcano in the peaceful corn "milpas" of the tiny village of Paricutin? Perhaps you have wondered what happened to the people of this village, and the other small communities the obstreperous young mountain destroyed. The Mexicans and their neighbors in other Spanish speaking countries kept up a lively interest in their fate—and their dramatic story turned out to have a happy ending.

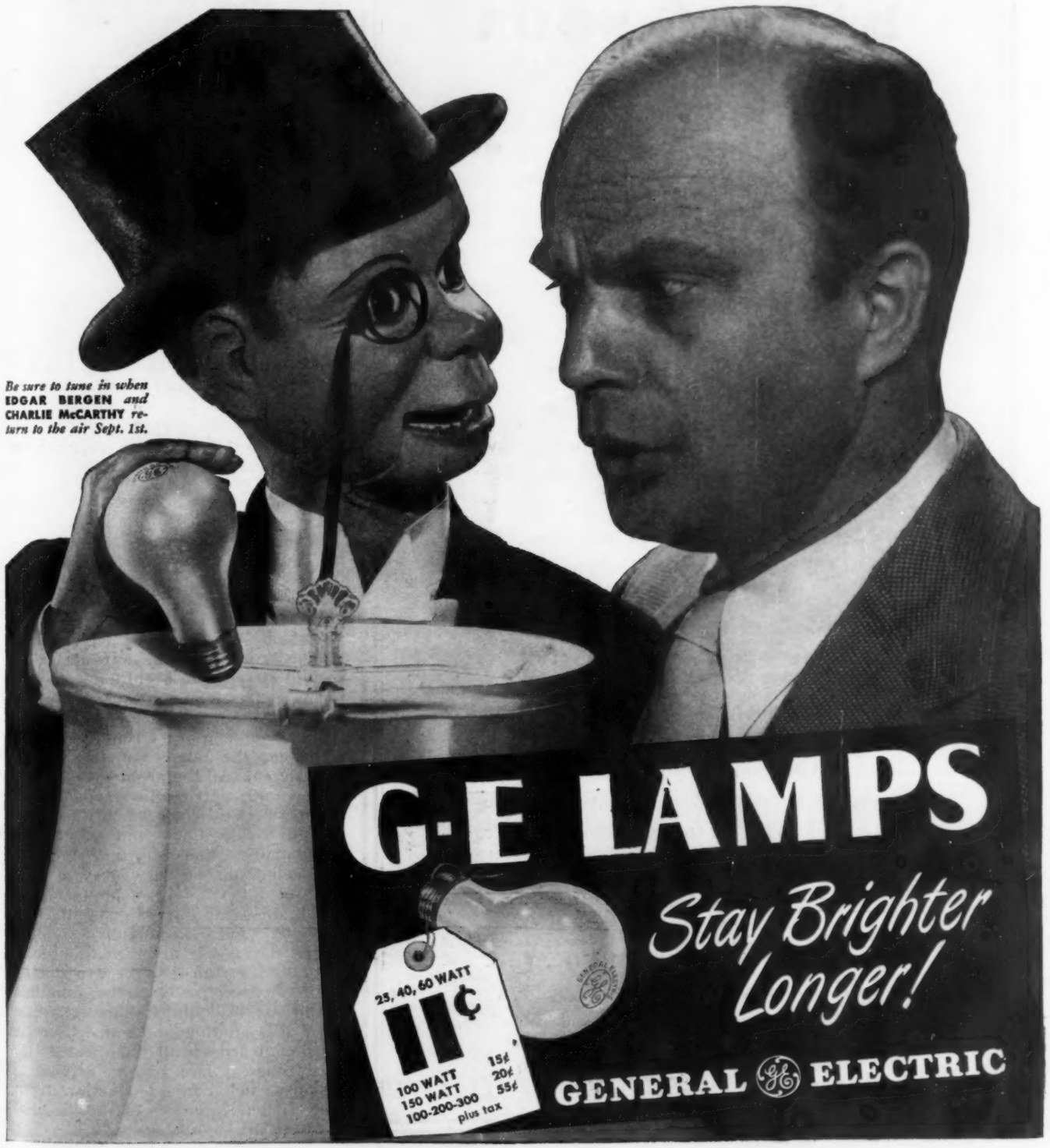
The government of Mexico evacuated the inhabitants of the devastated areas and created three new villages for them: Caltzontzin, Conejos and Doctor Miguel Silva. The citizens of all three towns will have safe water systems. They consist of capped springs with pipes to central outlets in the town, and a simple but effective method of chlorination. To people who have found it difficult to carry home enough water for cooking and washing from some distant spring, and who have seen their neighbors die of waterborne diseases, it is a step forward. Since rural Latin Americans live in villages like these, rather than on separate farms, these developments provide a pattern for similar simple water systems throughout the southern part of the hemisphere.

In the last four years, more than seventy water supply projects have been completed in Latin America, or are in progress. Nationwide surveys for safe water systems are being made in Venezuela, Bolivia, Chile and El Salvador. Of the South American republics, only Argentina lacks a similar cooperative program.

Yet, for the results obtained, the

"On my allowance, Bergen, I gotta be a Bulbsnatcher!"

YOU'RE wrong, Charlie—with G-E lamp bulbs costing so little, nobody has to rob one light socket to fill another. Why, any woodenhead knows a dollar buys a whole reserve stock of General Electric lamp bulbs. So don't let Bergen put words in your mouth. Tell him what bulbsnatching leads to—how it can make people strain their eyes, bark their shins in the dark, get so mad they tear their hair! Then tell him how little G-E lamp bulbs cost. How he can get them at his neighborhood store. How G-E lamp research is constantly at work to make G-E lamps ever better and to make them Stay Brighter Longer. Isn't that a bargain *anyone* would go for?



Be sure to tune in when **EDGAR BERGEN** *and* **CHARLIE McCARTHY** *return to the air Sept. 1st.*

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BRUSH YOUR TEETH WITH BAKING SODA

IN the course of a year the cost of the family's dentifrice comes fairly high. Here's one place where you can economize, without loss of effectiveness or dependability, by making Baking Soda the all-family dentifrice.

Arm & Hammer Baking Soda and Cow Brand Baking Soda are among the dentifrices acceptable to the American Dental Association Council, assurance of their purity and efficiency as cleansers. Their polishing action quickly brightens the teeth to their natural color. Their aftertaste is differently clean and refreshing—one you'll soon come to prefer.

A package of Arm & Hammer or Cow Brand Baking Soda costs but a few cents—will give many weeks of brushings. Try our Baking Soda on your teeth for just a week or ten days. Even in that short time we think that you, too, will come to prefer it to any dentifrice you have ever used.

CHURCH & DWIGHT CO., Inc.
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program has not been expensive. The Americas have spent some $500,000 a year on the work. "Know how" is the most important ingredient that North America can continue to offer in the cooperative arrangement.

This is a health movement with a bright future. Any one who has seen the new crop of Latin American experts in the sanitary engineering field can be sure of that. A large number of them have studied in the United States under fellowships for graduate work, and on travel grants which enabled them to observe closely the sanitary engineering methods used in the United States. When they finish their studies, these young men have a gleam in their eye and their sleeves are rolled up. They are eager to go to work.

Children's Headaches

(Continued from page 663)

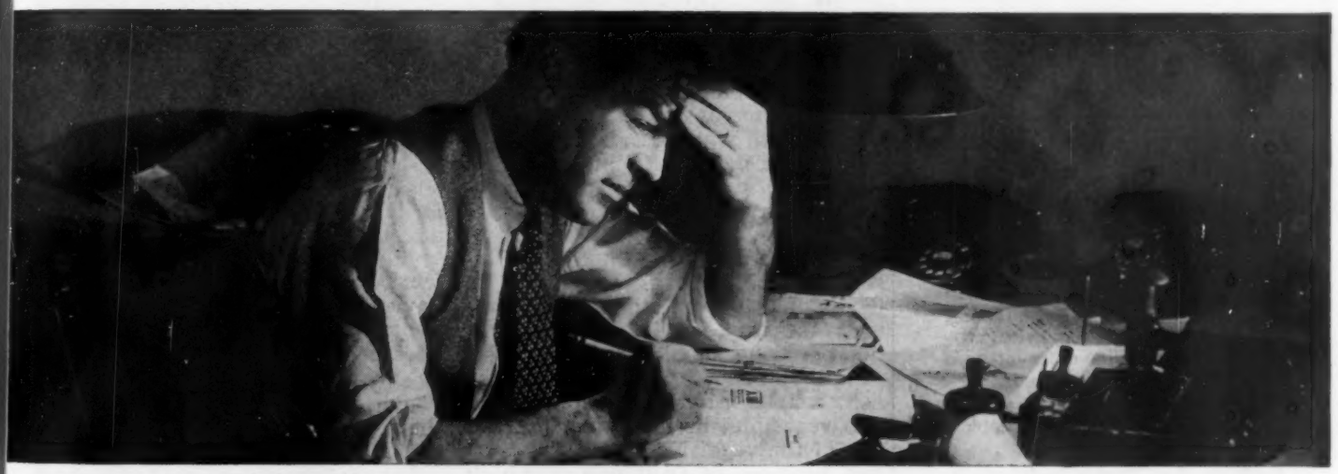
result from a wide variety of causes; so wide, in fact, that it may require consummate medical skill and wise judgment to ferret out the cause in each particular instance. Headaches are not just symptoms that can be treated with headache tablets or with purgatives. Headaches may be the warnings of deep seated disease, requiring anything from changes in diet to brain operations for their alleviation. Headache is a symptom of trouble, and not the trouble itself. The progressive physician, with the facilities of the modern hospital, is prepared to cope with the vexed problems of headaches in children.

Often too the child psychiatrist may be of help. The nose and throat doctor, the eye doctor, the neurologist, the neurosurgeon, the psychiatrist, and the pediatrician, singly or together, may be the ones to bring relief through proper diagnosis. Headaches are not to be neglected or set aside without the advantages of a full investigation into the underlying causes. They are certainly not to be treated with headache tablets, except for temporary relief and then only on the advice of the family physician. All the problems of headaches are not readily solved, but many are; and not a few of these are cured by prompt and intelligent treatment. Many types may be neglected beyond the hopes of successful relief, as in some forms of brain disorders, unless promptly recognized and successfully treated. Here the nose and throat surgeon will find a sinusitis, the eye doctor will discover astigmatism, another child will be found to have migraine and still another some deep seated brain disorder; all manifested by headaches. Few other problems require such concerted action from the various branches of the medical profession.

Health Superstitions

"Is night air unhealthy?"

NO! That superstition arose in Mediterranean countries, where people thought night air caused malaria. Actually, that disease is spread by mosquitoes which are active at night. While night air is often damp and chilly in comparison to sunlight, it is not harmful to anyone who keeps warm and dry.



"Do glasses alone correct faulty vision?"

NO! Important as they are, glasses alone cannot correct faulty vision. Your visual comfort and efficiency depend upon the professional services and technical skills of your Ophthalmologist, Optometrist, Ophthalmic Dispenser (Optician). Don't be satisfied with anything less than thorough eye care.

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Careful people don't merely "buy glasses." They know that professional services and technical skills such as these are essential to visual comfort and efficiency. It is for these services and skills — not for glasses alone — that you pay a fee.
"Seek professional advice—not glasses at a price."

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"Ice Cream... how nutritious!"... you know how delicious!

In addition to its delicious flavor . . . aside from its delightful welcome coolness . . . Ice Cream provides important amounts of a number of nutrients:

Vitamins. Ice Cream is a good source of Vitamin A and Riboflavin (Vitamin G) and contains other vitamins found in milk.

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All of these nutrients provide health and well being.

Ice Cream makes a leading contribution to our national rehabilitation program and to raising everyone's morale. For it combines almost universal taste appeal with a generous supply of protective and health-building elements.

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EST. 1919 NATIONAL DAIRY COUNCIL

NATIONAL DAIRY COUNCIL

111 North Canal Street, Chicago 6, Illinois

A non-profit, educational organization promoting national health through a better understanding of dairy foods and their use.

Executive's Health in Industry

(Continued from page 673)

probably live a long, vigorous, productive life. But not that way. These exhibitions of powers beyond your years are a friendly invitation to disaster. Don't do it. Never exercise to the point of fatigue. Never exercise when you are fatigued. Don't play eighteen holes of golf when the weight of your shoes makes you drag one foot after the other. When you feel that way don't go to the golf club; go to bed. Play within the limits of your strength reserve. Don't exceed the functional capacity of your heart. It may resent it and show its disapproval in ways that are too sad to anticipate.

The following comments pertain to hobbies. Hobbies are excellent but to pursue a hobby which adds to the accumulated burden of physical fatigue is unwise. A hobby should provide mental diversion and aid in relieving emotional tension. It should not add strain either to an overwrought mind or to a tired body.

I am always curious as to what people eat. Through the years I have watched in astonishment the diets that intelligent men follow. Their frequent inadequacy and irrational character is added proof of the resistance of the human machine to repeated brutal assault. No other mechanism can withstand the abuse so many of us give our bodies. Can you explain why many men, who boast a competent knowledge of their professional affairs, do not know the requirements of a normal diet? Is it difficult to remember that whatever one may eat in the course of the day, one should include a pint of milk, an egg, a portion of meat or fish, whole grain bread or cereal, two vegetables besides potatoes with one of the vegetables eaten raw, and two portions of fruit one of which should be raw? Many men who can recite the contents of the Kiplinger Washington Letters for the past six months or who can explain what Caesar did in Gaul or who know the *Merchant of Venice* cannot repeat the simple outline I have just given you. Some day the reason for that lack may be discovered and the facts I mentioned may be incorporated in the nursery rhymes for all to learn.

While we are on this subject, tell me how much you weigh? Do you remember the time when you could flex your muscles and closely imitate the appearance of those fabulous men who sold physical culture courses through the mails? Where, for example, have those manly abdominal muscles gone? Unhappily, today, between them and the external world there lies a heavy mass of adipose tissues—needless fat which adds neither grace nor health to the possessor. The degenerative diseases, high blood pressure, cardiovascular troubles and diabetes threaten those who are overweight. The condition is a disease—a bad one. Have you seen your doctor about it? Do not hide behind the pious claim that the trouble is glandular and that, in fact, you eat comparatively little. There may be a glandular element in it, to be sure, but remember if you use 1,000 calories of energy and you eat 1,100 you will gain weight; if you use 1,000 calories and eat 1,000 you will keep your weight; if you use 1,000 and eat 900 you will reduce your weight. See your doctor and let him manage your case. Don't follow the home medical encyclopedia. It may be dangerous.

I should probably be charged with gross neglect of two vital subjects if I were to close without some mention of tobacco and alcohol. I have discovered the delightful qualities of certain brands of cigars. I am also aware of the virtues of certain beverages through an occasional and, I must say, a limited exploration of their qualities. I say all this simply because I want my position to be clear.

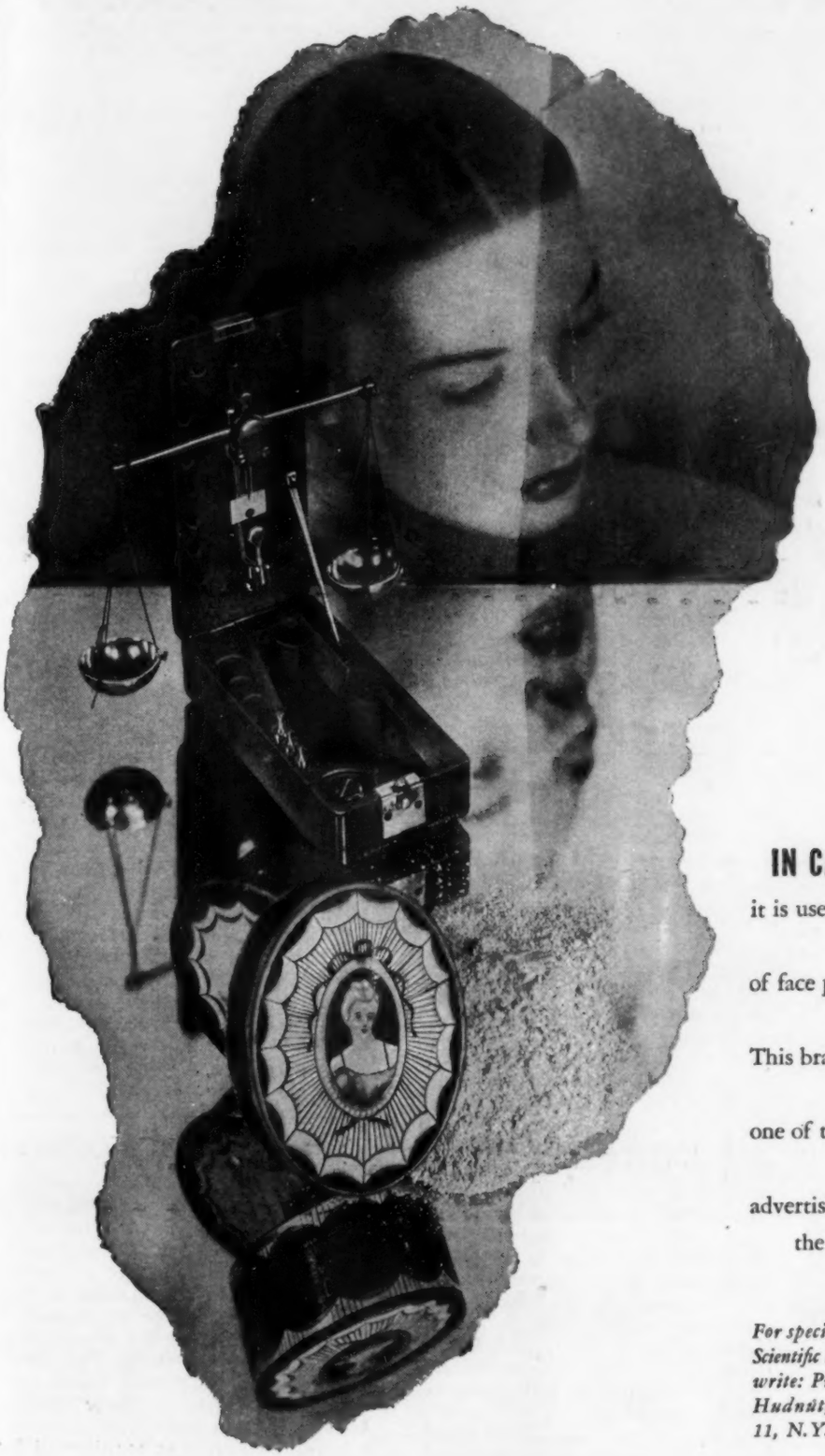
Now let us go back to tobacco. I have no quarrel with its moderate use. In moderation it may lead to a desirable relaxation; in excess it may irritate the upper respiratory passages, the gastrointestinal tract and lower both physical and mental efficiency.

Alcohol, like nicotine, is a potent drug. It is a narcotic. It does not act, contrary to popular belief, as a strong and persistent stimulant. It is a depressant. Free conversation and activity to which it leads are due to the fact that it frees the drinker from the inhibitions of the reasoning powers, which are blunted. It loosens the restrictions of the intellect; it does not increase either one's mental or physical capacities. Therefore, moderation is definitely indicated in the use of alcohol as well as in the use of tobacco.

Let me repeat one word of counsel. From the long years which you will add to your period of active service from faithful adherence to the rules I have stated, I urge you to allot an hour or so each year, more if necessary, of course, for a careful physical examination. Do this regardless of how perfect your health may appear. Remember that illness does not always attract attention to itself by producing physical distress and only a periodic and complete survey of our health can unearth abnormalities that may become serious through unconscious neglect.

SOY BEAN FOOD

A new dehydrated food with a soy bean base has recently been perfected by Clifford Clinton, restaurant owner, the *Food Field Reporter* said recently. Nine ounces of the food provide an entire day's nutrition, it is asserted.



IN CASES OF SKIN ALLERGY,

it is useful to realize that one well-known, nationally sold brand of face powder can be accurately described as "hypo-allergenic." This brand is DuBarry Face Powder by Richard Hudnut... one of the many DuBarry Beauty Preparations accepted for advertising by the Journal of the American Medical Association.

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...and hearing *every* word, thanks to my new Zenith Hearing Aid.

It's a pleasant change from being whispered *about* because I was so reluctant to wear an aid.

I was actually penalizing my friends as much as myself, too. They had to shout to make me hear—and I hated to be shouted at.

That's changed since the day I put on my Zenith. Wear it as casually as eyeglasses—and get more *fun* out of life than I ever dreamed was in it.

Yes... getting a Zenith Hearing Aid was the smartest thing I ever did for myself *and* my friends!

Try the New ZENITH Super-powered Hearing Aid

- Exclusive 4-Position Tone Control—adjusts *instantly* to your individual hearing needs with the flick of your finger.
- Neutral-color Earphone and Cord—actually as little noticeable as eyeglasses.
- Only $50 complete, ready-to-wear.

Also Available: The New Zenith Bone Conduction Hearing Aid. $50

FREE! A new, informative booklet which frankly discusses the problem of impaired hearing—and how it may be helped without needless embarrassment. Send for your free copy, today.

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Rehabilitation in Russia

(Continued from page 678)

as easily as an unhandicapped man.

He justified the philosophy behind our Russian Relief program, that of "helping the Russians help themselves." This philosophy is inherent in our artificial limb project which developed in an interesting way.

Last year, Dr. Nikolai Priorov, head of the Central Institute of Traumatology and Orthopedics in Moscow, who has the grave responsibility of caring for his country's amputees, came to America to learn if manufacturers of artificial limbs could meet Soviet needs. Dr. Priorov soon realized that American manufacturers were kept busy servicing the 16,000 American military amputation cases and that the Soviet Union would have to develop her own means of rehabilitating her one million citizens in the same plight. He knew that artificial limbs cannot be made on an assembly line. Each limb must be tailored individually to insure most comfortable and useful performance.

The Nazis did a thorough job of hospital destruction in the USSR. More than forty thousand medical institutions and clinics with complete equipment were demolished. So were pharmaceutic plants and key industries that manufactured drugs and medical supplies. With this lack of hospitals and equipment, Soviet authorities could not possibly offer their amputees the necessary surgical care and artificial limbs.

Our Board of Directors sat down with Dr. Priorov, Dr. Vasily D. Chaklin and others in the group to see how Russian Relief could help meet the emergency. We knew that the longer this work is postponed, the more difficult, if not impossible, it becomes. We decided there was only one immediate answer—we had to provide the means and the facilities for this humanitarian rehabilitation effort. To do so, Russian Relief has undertaken to equip a 2,000 bed hospital in Moscow, a central factory for the manufacture of artificial limbs, and a series of local hospitals and workshops throughout the Soviet Republics specializing in the care of amputees. Everything from the beds in the hospitals, doctors' gowns and surgical instruments to the turret lathes, disk grinders and hand tools that produce complete artificial limbs will be shipped as gifts from sympathetic Americans.

Lists of the necessary equipment for these medical institutions and workshops have been prepared, at our request, by Soviet doctors. In order to personalize this American giving, individuals, organizations, churches and communities "adopt" one or more specific pieces of equipment and raise funds for their purchase. A brass plaque bolted on each machine, lathe, etc., bears the name and address of the donor together with the words, "Presented in Friendship to the Heroic People of the Soviet Union."

In giving a gift, most of us, I think, like to feel that it will be put to good use and bring happiness to the recipient. My recent trip to Russia more than convinced me that our medical supplies are not only utilized to the fullest, but further that they contribute to Soviet scientific advances.

Constantly, we saw exciting evidence of such medical progress. One man we met had been fitted with an arm and several interchangeable artificial hands. His other arm had been amputated above the wrist, and the two bones of the forearm had been separated slightly to form two thick fingers, once flesh and skin covered the bones. Training had enabled him to use these "fingers" and even to develop a strong grip. Later the "fingers" developed sensitivity at the tips, so that he could dress and eat without help, in fact take care of himself completely.

Immediate results of our artificial limb project can be translated concretely into useful and productive life for thousands of handicapped men, women and children. Furthermore, the successful execution of the plan inherently carries with it the strengthening of the bonds of friendship and understanding between the people of the two countries.

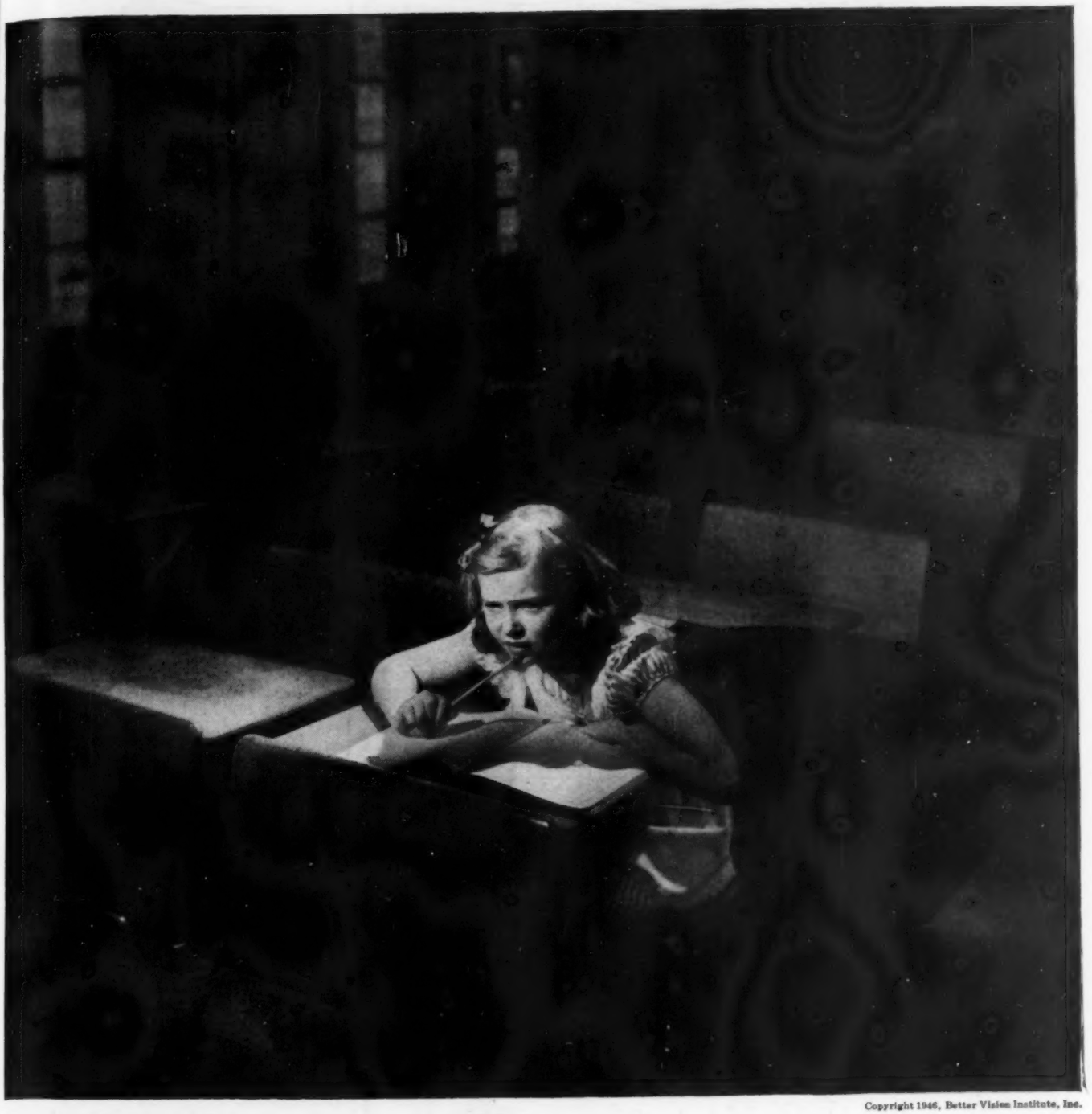
Dr. Morris Fishbein, editor of *The Journal of the American Medical Association,* expressed just that feeling in a letter he sent to me recently. Dr. Fishbein wrote, "I do hope that you can secure the necessary assistance out of the sympathetic consideration of the people all over the world to meet this tremendous need. I have found that the international character of medical science and the universal interest of people everywhere in health are among the most important methods by which true friendship can be brought about among all the peoples of the world."

FOLIC ACID TREATMENT

A nutritional deficiency disease called sprue has shown a striking response to treatment with synthetic folic acid, a part of the B complex vitamins, according to an article in *The Journal of the American Medical Association.* Three physicians from Vanderbilt University School of Medicine say that within two or three days after folic acid treatment was begun patients in their study "experienced an improved sense of well being, which was manifested by increased alertness and cheerfulness."

Although prevalent in many tropical countries, sprue is widely distributed in the United States. It is a chronic disease, markedly benefited by liver treatment, and is closely related to pernicious anemia.

The authors say that the condition is characterized by inflammation of the tongue, diarrhea, loss of weight, pigmentation of the skin and poor absorption from the intestines.



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You Can Be Happy with Dental Plates

By Max M. Schwartz, D.D.S. Cloth. Price, $1.00. Pp. 108. New York: Embassy Publishing Co., 1945.

The author, in a gratifyingly frank manner, takes his readers into the dental laboratory and workshop. In simple language and with excellent illustrations, he dispels many of the mysteries of denture construction, wear and maintenance. Personal anecdotes and case histories transform what could be an indelicate and dry subject into a well of interesting and worthwhile information.

Starting with a short chapter on the reason teeth are lost, the author answers questions that are in the minds of the average denture wearer: modern denture materials; immediate dentures; the intricacies of taking impressions, processing and fitting dentures; attitude of the dentist and the psychologic cooperation required of the patient are discussed in straightforward terms. The effect of dentures on health, appearance and masticating efficiency; the limitations of artificial appliances; their use, care and replacement are described in lay language.

LON W. MORREY, D.D.S.

Chemistry of Food and Nutrition

By Henry C. Sherman. Cloth. Price, $3.75. Pp. 675. New York: The Macmillan Co., 1946.

For those who are familiar with previous editions by this author nothing more need be said than, "Here is a good book!" Our knowledge of the science of nutrition is being so rapidly increased that in order to keep abreast of the latest developments in a rapidly expanding field this book, in its seventh edition, has been revised and rewritten throughout.

For those who are interested in the principles of food chemistry and nutrition as a study of how this branch of science is related to health, this book is an excellent guide. To the physician interested in the maintenance of health and the treatment of disease it offers basically important information. Its most extensive use, however, will continue probably to be for students in college classes.

Of convenient size and well bound, it is an easy book to read because of the author's style and clear legible type. Excellent reading lists follow the sections to which they are related and include not only the author but the full title of the article referred to. The indexing is well done and there is a useful appendix.

JAMES R. WILSON, M.D.

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Fingernail Diseases

(Continued from page 679)

Nails cannot be nourished from without, but daily applications of a bland oil may prevent brittleness when the condition is not due to an infection. Oil cannot strengthen the nails. Excessive immersion of the hands in soap and water is to be avoided in cases of soft nails and those that are separated or infected.

All that has been mentioned about damage or nail injury applies also to creating infections in the tissues near the nails. Onychitis, or inflammation of the nail bed, may be acute or chronic. Manifestations are redness, swelling and pus formation, with perhaps separation of the nail from the bed. In the chronic infections, the nail becomes distorted and signs of inflammation are mild. These cases usually respond to hot water soakings and the use of antiseptics, and x-ray treatment is of value.

Inflammation of the nail folds, or cuticle area, is known as paronychia and is commonly called "ring-around" or "run-around." Germs gain easy entrance to the tissue by means of torn hangnails and the nail folds become swollen, reddened and tender. When pus is present, drainage should be established. Sterilizing manicure instruments in alcohol is to be encouraged and hangnails should always be removed promptly with scissors—never by biting.

Atrophy or lack of growth of nails has a variety of causes. It may be acquired before birth, or represent a family characteristic. This type is usually seen as small stubs in the halfmoon area. The atrophy may be a sequel to some inflammatory condition such as psoriasis or chronic eczema. Nail wasting is sometimes seen in changes due to spinal cord conditions or in affections of the peripheral nerves, as seen in leprosy. The nails become thinner, furrowed and ridged, pitted and worm eaten and lose their luster. They may split or become brittle and of abnormal color. The cause must be sought and treated.

"Spoon nails" are characterized by a depression of the central portion and are fragile and irregular. These are sometimes seen in anemia, chronic debilitating conditions and in hands frequently exposed to alkali solvents.

Separation of the nail from the bed may be associated with underactivity of the thyroid gland, or instability of the circulatory system. Chronic mild trauma, prolonged immersion in hot soap solutions, inflammation of nail bed, or some new growth such as a wart can be factors producing the separation. The space may be filled with cast off nail substance and with dirt that prevents adherence to the nail bed.

Fungi are microscopic members of the plant kingdom. They do not contain chlorophyll and thus do

not photosynthesize for themselves. When viewed microscopically they appear as fine threads or perhaps show clumps of little grapelike forms, depending on the species. When cultured, they grow well at body temperatures and require ample moisture. Over twenty species of these fungi have been found involved in ringworm of the nails. Males and females are affected in about equal proportions, with maceration resulting from prolonged and frequent wetting of the hands, such as in fountain workers. These little plant life organisms occupy the deep layers of the nails and may thrive for years if untreated. They act as reservoirs to spread the infection to other parts of the body. An expression of the infection may be a white patch in the nail. The involved nails become opaque, lusterless and friable. One type results in thickening and distortion.

Eczema and other conditions cause similar changes, but fungus infections can be separately recognized by finding the fungi on direct examination under the microscope or by culture. Treatment is accomplished by mechanical removal of the crumbly, degenerated portions and the use of proper strength fungicides. X-rays are valuable.

Distortions and malformations may be camouflaged by the application of lacquers or even false nails. There are two occasions when these must be omitted; i. e., while using fungicides and when there is dermatitis on other parts of the body. Some individuals are allergic to one or more of the properties of nail lacquers as manifested by acute inflammation on the face and neck. This allergy often lingers and such a person's only alternatives are either complete abstinence from use of lacquer or the hope of finding a preparation not containing the agent to which he has shown hypersensitivity.

UNRRA SERVES ITALY

With sufficient medical supplies on hand and distribution and proper use assured, the medical rehabilitation of Italy is now in progress under an UNRRA-Italian government program to combat all disease, prevent the spread of epidemics and plan future national health, UNRRA Director General F. H. LaGuardia announced recently after cable advices from Rome.

"UNRRA's first job of providing emergency relief for large sections of Italy's people is now being broadened to include a general public health program and the rehabilitation of Italy's pharmaceutical industry," added Mr. LaGuardia.

Several general distributions of medical supplies have already been made. Another general issue of supplies weighing 400 tons and costing $500,000 will be inaugurated soon with a special distribution of $11,000 worth of narcotics for medical use.

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Know Your Health Department

(Continued from page 661)

public in prevention of tuberculosis, venereal disease, other communicable diseases and in the elements of healthful living.

In order to carry on these necessary tasks, the committee suggests the following as a minimum of trained workers:

One doctor, with public health training, to give his full time directing the work of the local health department.

One public health nurse for every five thousand persons in the community with one out of each ten nurses to be a supervisor. If you expect the health department nurses to provide bedside care of the sick in their homes, one nurse for every two thousand five hundren persons will be needed.

Two sanitary inspectors for every fifty thousand persons, one of whom should be professionally trained, preferably as a public health engineer.

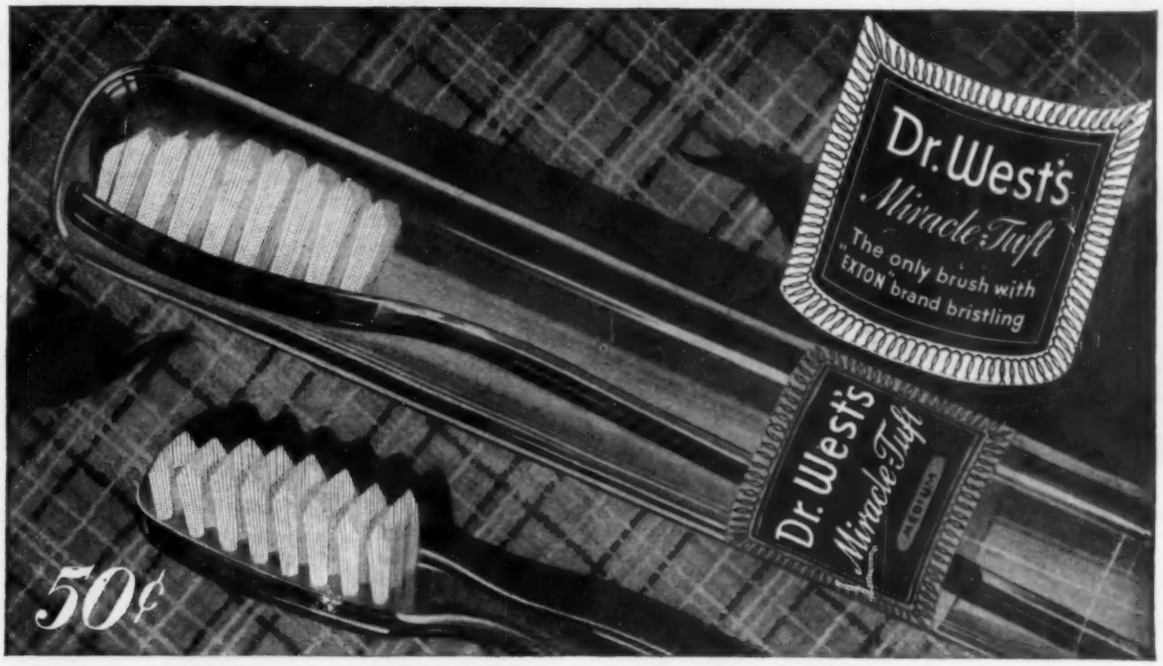
One clerk for every three nurses, or one for every fifteen thousand persons.

Local doctors and dentists to serve in medical and dental clinics, and laboratory workers, dental hygienists, health educators and other workers, depending on local conditions and resources.

You will ask what this service will cost. No one can say with accuracy because of the changing costs of goods and services. In terms of what your dollar would purchase in 1942 the committee estimates that every community in the nation could have at least this minimum service by spending one dollar per person per year. Of course many communities already spend that now or will spend more in the future. But for $2 or $2.50 annually per person your community can have excellent local health service beyond the minimum that can be bought for a dollar a person.

For the entire country this means between one hundred and thirty and one hundred and forty million dollars. That's a lot of money but it's not much more than one-tenth of what Americans annually spend betting on horses. In other words, the Committee suggests that you spend ten cents to prevent disease headaches for every dollar spent for race track headaches.

To put it another way, the American people in 1942 spent about $2,420,000,000 for all forms of tobacco. Only about six cents of every dollar spent on tobacco would pay for the minimum local health services recommended by the Committee. In 1942 the American people paid $5,187,000,000 for alcoholic bev-



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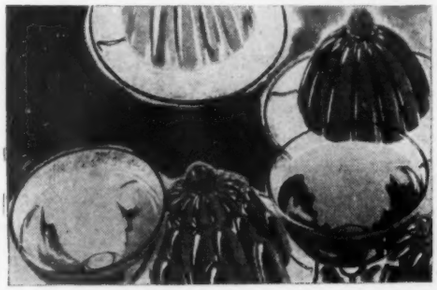

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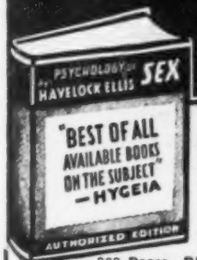

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erages. Less that three cents of every dollar spent for this purpose would pay the minimum local health service bill. In other words, nearly nine billion dollars was spent for these three purposes in 1942; only two cents out of every dollar thus expended would have provided from thirty to forty million dollars more than is needed for a minimum local health service and four cents would provide a luxurious service in your community and in every other community.

According to these terms, the cost of local health service is exceedingly modest. Nor does this take into account the savings due to the fact that people who are mentally and physically well do not cost you as a taxpayer nearly as much in relief funds, cost of care in mental hospitals, and in many other ways, as those who are sick or incapacitated.

The Committee further states that in some states such as Minnesota or Iowa, where there are more than two thousand five hundred towns, villages, and cities, or in Massachusetts with three hundred and fifty-one, the state health department is taking over work that should be done locally. If you do not insist that your local government do something about this trend, these responsibilities may soon be permanently taken away. Whether local officials like it or not, you and the others who comprise a third of the nation that has less than minimum local health service, will not do without it much longer. Experience indicates that you are determined to have this service, even if state officials have to do the job. You only have to inform local officials you'd like it better if they did the job and that you'll back a proposal for a county wide or several county unit that can afford full time medical health officer and staff. The choice is yours. Will you do what is needed locally in the good neighbor spirit or will you give up your traditional American local pride and self respect by calling in a state or federal official to take over? It will cost you tax money in any event, and may well cost you more if done by remote control.

Pulmonary Tuberculosis Surgery

(Continued from page 677)

outside of the lung. This permits the muscles, skin and fat in the chest wall to fall directly on the lung and so collapse it and any cavities that the lung may contain. The lung collapse becomes permanent. This is advantageous because before the operative procedure the breathing capacity of the lung was severely compromised anyway. Thoracoplasty has become so standardized that it is responsible for the saving of countless lives and the symptomatic improvement of countless more patients.

There are a number of procedures that are still in the experimental stage. They include puncture and suction drainage of lung cavities (the Monaldi method), partial or complete removal of tubercular lungs, and extra-pleural pneumothorax. This last is the injection of air into the deepest part of the chest wall, so that the air has no contact with the lung and yet it pushes the lung away from the chest wall. For the present our observations and end results are not final and so it is difficult to draw conclusions from the miscellaneous operations just described.

To summarize, I have tried to tell you about the medical background of pulmonary tuberculosis and what the principles of collapse therapy are for the treatment of the disease. The role of the thoracic surgeon has been emphasized. Standardized procedures that he uses to help in the collapse of lungs and lung cavities have been described. They include pneumothorax, phrenic nerve crush, pneumolysis, and stage thoracoplasty. All of these operations, when indicated, have produced such dramatic and excellent results, and with such small risks, that countless lives have been saved and symptomatic cure has resulted in many, many more of the afflicted. By rehabilitation, retraining and social and psychologic readjustment, patients have been returned to the community in useful capacities and have been spared a life of chronic invalidism or early death.

VENEREAL DISEASE EDUCATION

It is important that professional groups, parents, church authorities, law enforcement officials, school administrators, labor unions and industry, as well as the general public, become aware of their responsibilities and the ways in which they can assist the venereal disease control program. The U. S. Public Health Service Advisory Committee on Public Education for the Prevention of Venereal Diseases, published in the Journal of Venereal Disease Information, provides a review of this subject.

Few states and territories maintain such a program. A number of health departments are engaged in some form of venereal disease educational program, but the committee believes that coordinated effort is lacking. Greatest need is to develop a long range general educational program, including all groups, continuous in duration. It was, therefore, recommended that the U. S. Public Health Service continue its efforts along these lines by developing educational materials of high quality, by assisting in the establishment of training centers, and by serving in an advisory capacity.

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St. Louis Dental Health Program

(Continued from page 671)

been available. Basing statistics on twenty-three schools of fourteen thousand six hundred and two pupils in the 6 to 19 year age group, here are some of the facts uncovered:

The average dental caries rate in permanent teeth per each one hundred children examined is one hundred and ninety-one—in other words about two decayed teeth per child. Sixty-four per cent of all teeth attacked by decay were still decayed; five per cent of attacked teeth were missing, and thirty-one per cent had been filled. These average figures include three Negro schools of two thousand three hundred and fifty-five pupils. The average caries rate in the twenty white schools is shown as two hundred and twelve per one hundred examinations—an increase in the incidence of dental caries, while the per cent of total decayed teeth dropped to sixty-two per cent; missing teeth remained at five per cent, and filled teeth increased to thirty-three per cent. The average caries rate among Negro children per one hundred examined dropped sharply to eighty-three, or less than one per child. However, the per cent of total decayed teeth among Negro children rose to eighty, while the filled teeth percentage was only eight. Missing teeth among Negro children rose sharply to twelve per cent, against the state average of missing teeth which is four per cent.

Breaking down the caries rate among individual schools, the highest caries rate encountered was three hundred and fifty-six per one hundred examinations, or nearly four decayed teeth per child, while the lowest rate among white schools was one hundred and twelve. The lowest caries rate of all, fifty-five, was in a Negro school, but this same school has the highest percentage of total decayed teeth (ninety) of any in St. Louis, and the second highest percentage of missing teeth (ten).

A low caries rate does not reflect the actual picture of the dental health of any school. There must be a correspondingly low percentage of decayed and missing teeth and a high percentage of restorations. In this category, St. Louis' school for crippled children leads all the rest, reflecting the care and attention given to these special cases. With a caries rate of one hundred and ninety per one hundred, only twenty-seven per cent were decayed, one per cent missing, and seventy-two per cent filled.

Do children from higher income homes have better average dental health? The statistics seem to indicate that they do. While no distinction or point is made of this in the St. Louis survey, the author has broken down these various schools

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into known location and general income groups. The results are as follows:

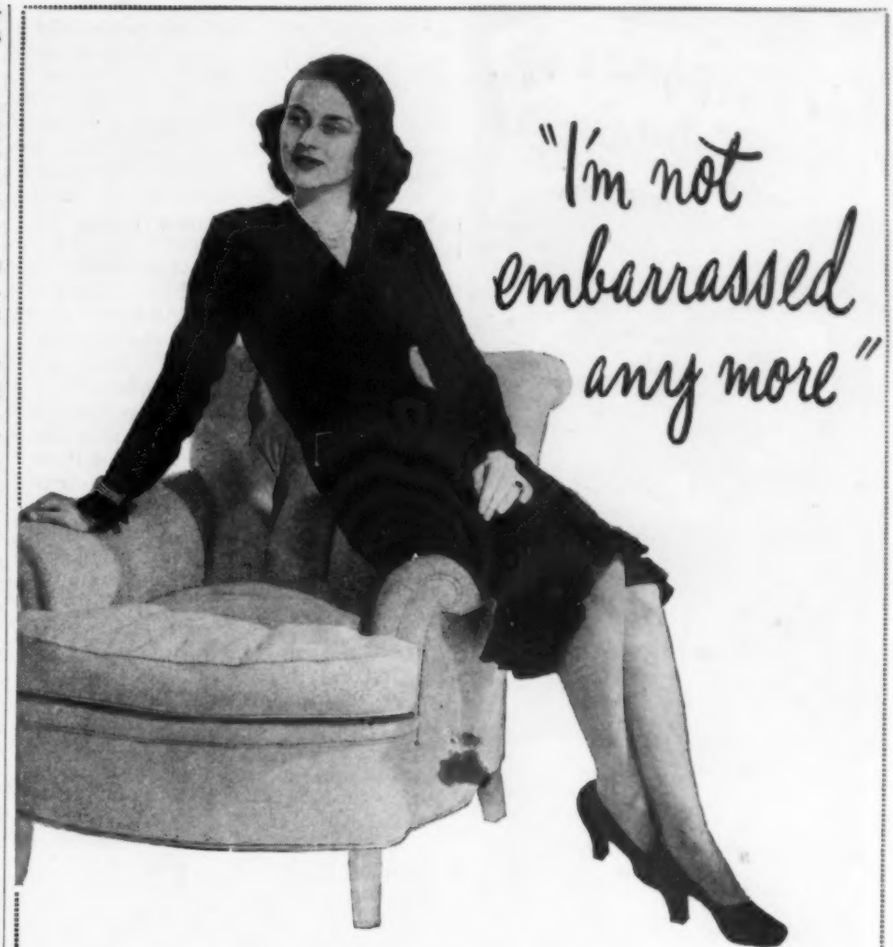
	Dental Caries Rate per 100 Children	Per Cent Decayed	Per Cent Lost	Per Cent Filled
Higher Income Group...	202	43	4	53
Middle and Upper Middle Group	246	70	4	27
Low Income Group.....	230	72	6	23

These figures clearly show a better ratio between filled and decayed teeth, as well as a lower caries rate. This reflects, not so much a superior type of tooth structure, as it does intelligent attention to dental health habits and frequent visits to the dentist. The shocking figures are the closely paralleled ratios of poor and middle incomed groups. It is only logical to assume that families with low incomes find it harder to give needed dental attention to their children because of the pressure of other obligations. There is less awareness to the implications of poor dental health. On the other hand, there is available to indigent families the services of the Municipal Dental Clinic, which should offset to some degree the high incidence of uncared for teeth. Fesearch has proved that malnutrition does not produce dental caries, nor can caries be prevented by adequate diet. Dr. Murphy cited instances in his experience with the Missouri State Health Department, where children in remote rural areas generally had normal and often sound teeth when they lived largely on a diet of sowbelly pork and beans.

Children of middle and upper class homes have the poorest dental health, comparatively speaking. There is little excuse for the poor picture presented, for these are families that can afford to provide dental attention and education for their children. One reason for this highest dental caries rate would seem to be the ability of the average family to indulge Junior and Judy in their natural likings for the finer carbohydrates—in other words—candy, cake, pies, cookies, jam, preserves, jellies, honey, and soda pop. Sugar is the proved enemy of tooth enamel.

Dental research has proved that there is no relationship between the intake of calcium and phosphorus and dental caries. It has proved that there is no definite relationship between perfection of teeth and general mouth cleanliness, and the activity of caries. It has evidence that inherited teeth characteristics in some cases are more important factors in the incidence of caries than diet habits. In other words, there may be a tendency in some families to poor tooth structure that seems to maintain in all offspring.

Research has proved that there is a direct relationship between the intake of sugar and the rate of dental



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caries. Ingestion of carbohydrates in the form of sugar releases lactic acid in the saliva, providing an ideal atmosphere for the increase of Lactobacillus acidophilus—the organism that attacks and decalcifies tooth enamel preparatory to decay. So, I repeat, this high caries rate must have some basis in the indiscriminate use of sugar in various forms by unsupervised children. Liking for sweets is by no means confined to the middle group. This is a common weakness among all children, and parents believe it to be the inalienable right of childhood. Research figures are not needed to substantiate the fact that most children, if uncurbed, would be delighted to make sweet things the major part of their food intake. Controlled diet can reduce and even eliminate dental caries. But it would be foolhardy to assume that widespread and rigid diet supervision can be expected among parents with active, normal children. Parents can, however, exercise a little more thoughtful control over the natural desire for excess sweets in children, and prevent to some measure the inroads of dental caries. The present sugar shortage is a definite advantage in dental health, but few will recognize it as such. The low rate of filled teeth (27 per cent) in the middle group is evidence of the need for dental health education, not alone among children, but more particularly directed to their parents.

Deciduous teeth examinations in the St. Louis schools show the same relative statistics. The average caries rate per one hundred children was one hundred and fifty-one. Total per cent of decayed teeth, eighty-one; per cent filled deciduous teeth, nineteen. The figures are:

	Dental Caries Rate per 100 Children	Per Cent Decayed Teeth	Per Cent Filled Teeth
High Income Group.....	176	59	40
Middle and Upper Middle Group	179	84	16
Low Income Group.....	189	87	13

Here again is shown the relative carelessness in giving attention to "baby" teeth, except among the higher income group. Too many parents do not understand the advantage in keeping deciduous teeth in a healthy condition as a future assurance to good mouth structure.

On the bright side of the picture is the number of St. Louis children who have no decayed, missing or filled teeth. In the deciduous group, fifty-four per cent of all white, and sixty-three per cent of all Negro children have perfect sets of teeth, from the caries standpoint. In the permanent tooth group, thirty-eight per cent of white and sixty-three per cent of Negro children have no decayed, missing or filled teeth. Of all children needing dental treatment, twenty-one per cent need prophylaxis only.

This would indicate that basically, Negro children have sounder tooth structure, or are less susceptible to Lactobacillus inroads. Obviously, the number of Negro children examined is less than one-fifth the number of white children, but the ratio would eventually hover somewhere near this figure. In terms of dental attention, the Negro child fares poorly, for when decayed teeth are present the percentage is heavy. He is more prone to neglect, as shown by the low percentage of filled teeth and the large number of missing ones.

So much for the statistics. An indication of the program's success is the enthusiasm and interest engendered among parent groups. Dentists can examine children's teeth to infinity, and gain no lasting results if the parents do not take an interest in their children's dental health. A total of three thousand two hundred and four parents were present at the St. Louis school examinations, or one for each four children. This is a notable achievement in bringing parent and school into active cooperation. The plan to utilize mothers' services in actual assistance stimulated their interest to where they voluntarily rounded up other parents to bring them to the schools. One enthusiastic matron volunteered and assisted throughout the entire week of examinations. Their presence insured a factual understanding of what was being done, and encouraged parents to take prompt action when their children were in need of dental correction. A further advantage was evidenced where there were malformations in the mouth, speech and hearing difficulties. These defects could be evaluated with the parents, and steps taken to correct them. Only among the poorer sections was there evidenced a lack of interest on the part of parents. School officials learned not to expect parental visits there unless they had some grievance.

Parental interest was further shown in the number who sought dental assistance when aware that their children needed it. Twenty-six per cent of all children examined have so far visited the dentist, or two thousand six hundred and seventy-three. Of this number, forty-six per cent have completed work, while the remainder are still under treatment. This is remarkable in view of the acute shortage of dentists, and the long wait for appointments that is common in all parts of the country.

The St. Louis school system is not interested in dental health per se. It is interested in maintaining a high level of healthy students, that means healthy school work. Poor dental health may be only a clue to other conditions that make for poor students. Schools in war-sprouted housing developments have a large turnover in student population and a correspondingly low number of filled teeth and high percentage of lost

teeth. Ninety per cent of students in one school are from broken homes; the number of decayed teeth is among the highest percentages, while filled teeth of these children are the third lowest percentage of all schools. These figures probably reflect the lack of consistent family attention to their development.

In some cases there is a direct connection between poor teeth and truancy. Not as a direct factor, but again as a clue to home surroundings and casual attention to the child's needs. The St. Louis program works closely with the welfare department in checking on the health of problem children. In cases of truancy, and sometimes delinquency, they are interested in finding out the causes. Truants and delinquents are given not only a thorough dental examination, but a physical examination as well, and a thorough check into their home conditions to ascertain whether they can be made into good citizens. St. Louis has a dynamic and forceful officer in this department, who is fair, but tough. The offender is given every chance to conform, and so effective has this intelligent handling of the problem been that eighty-five per cent of truancy cases have been cured.

Education in public dental health will continue to be the prime problem in dentistry, so long as the general public remains apathetic to the relationship of sound teeth to a healthy body. The war years have wrought no profound advances in technic in dentistry as they have in medicine. A flurry of public interest has been fanned by experiments with fluorine in drinking water, as a means of effecting a tooth structure more or less impervious to dental caries. This development is largely in the experimental stage in several cities, for it is a technic that must be carefully watched for a long period of time, before known results are possible. The amount of fluorine added to drinking water is infinitesimal—from .4 to 1 part fluorine per million parts of drinking water. Too large a percentage will mottle the tooth enamel of those who consistently drink such treated water. Most people have but a vague idea of the effect of fluorine, and many think of it as a disinfectant. An interesting development in public reaction occurred in one town, when city officials announced that they were adding fluorine to drinking water, beginning at a certain month of the year. Immediately after the beginning of the month, they were bombarded with letters and telephone calls from irate citizens, claiming symptoms of most known diseases and some unknown, and blaming their miseries on the addition of fluorine to their water. The officials remained unresponsive to the barrage, and after the month had passed, they calmly announced that they had *not* added fluorine to the water that particular month, but would start the following month. Needless to say, they have had no further complaints.

Since small scale experiments with fluorine have shown remarkable results, it may follow that the larger operations now under experiment will be productive of better dental health. In the meantime, "first things first," has been the principle which had to be applied by dentists and dental educators. Much of the preventive work stressed in the last ten years has had to be curtailed, if not abandoned, until the muddy waters of war time congestion clear a little. Education in dental health is not primarily the problem of the dentist in his limited contacts with his clientele. It is a problem for the school system, the community, and even perhaps the government. One of the bright spots in such education is the long range program of the St. Louis school system. After one year of operation, they have produced some rather remarkable statistics and practical results.

Getting Them Off to School

(Continued from page 669)

Finally, if mother takes him to school the first day, he should fully understand what she will do before they start. She should explain that she will show him the way the first day, introduce him to the teacher, and that she will then leave while he remains in school with the other boys and girls. In all probability, he will be calm about the situation if he knows exactly what is going to happen and why. It is possible that he may still be upset and cry or want to go home, but even this will not be so violent, if he understands, as it is among those children who are "dumped" in school the first day totally unprepared.

No one enjoys a sudden change, completely new environment. These beginning pupils are—in case some parents have forgotten—as human as they are, and need the same sense of security that adults demand. This can be developed in the mind of the child, and this development can mean the difference between making school days fun or making them something to be looked on with distaste. While the shock of being abondoned in school on the first day by a mother or father may not have serious and lasting effects (depending on the home conditions and the attachment between the child and the parents) it isn't a necessary evil. It is an evil that need not come into the child's life at all. Being prepared for school will make his initiation so much more pleasant, and the day so much more enjoyable to the teacher and other pupils, that it will be time well spent by both parents.

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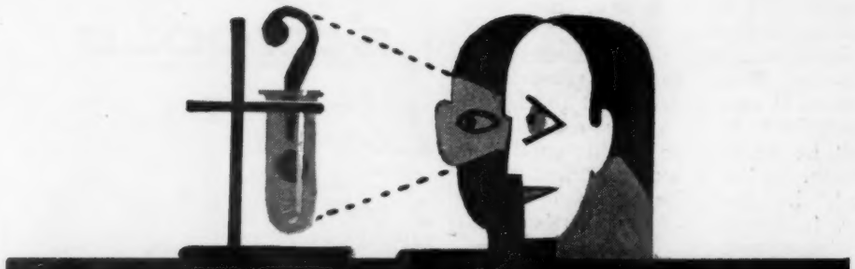

HEALTH in the headlines

By KATHLEEN SIMMONS

EARLY TO RISE

Evidence of the beneficial effects of early rising after certain operations has been offered recently by a Swedish journal. Dr. E. Dahl-Iversen writes in *Hospitalstidende* that during the past three years he has allowed his patients (patients, that is, who have undergone one of several specific types of surgery) to be up on the day following the operation.

Among 1,736 patients so treated, the occurrence of clots in the blood vessels and heart was reduced from 3.5 per cent to 0.58 per cent. Trouble with recurring hernias, which might conceivably be expected as a result of early rising after surgery for hernia, was not increased. So if your doctor tells you to get up on the day after your operaton, don't be surprised or hurt—he's not being cruel, just sensible. And if he makes you remain in bed, don't decide immediately that he's an old fogey—it probably means that early rising isn't suited to your case.

MATRIMONIAL CHANGES

One of the factors instrumental in promoting our national homogeneity in recent years has been an increasing tendency among foreign born Americans to marry native born citizens. Twenty years ago in New York state (but excluding New York City) only two fifths of foreign born women married native born men. Today the figure is two thirds. The percentage of foreign born men marrying native American women has increased from one half (twenty years ago) to three fourths today.

Not only do the foreign born marry more native Americans than previously, but intermarriage among people of various national backgrounds has increased. In 1928, for instance, 63.8 per cent of the women born in England, Scotland and Wales and living in New York state, married men born in their native countries. By 1941, only 44.5 per cent of these women married men from their homelands. The Statistical Bulletin of the Metropolitan Life Insurance Company, which gathered these statistics, considers this breakdown of racial and national barriers an excellent example of American democracy at work. Says the Bulletin, "The full import of this development can hardly be lost on a world which has suffered so much from racial and national rivalries and conflicts."

MEDICAL LIBRARY

We'll wager you didn't know that one of the Army's long established institutions is a Medical Library. It was founded in 1836 and today houses (in Washington, D. C.) more than a million items, 500,000 of which are bound volumes. It has a special medical art collection and the only known copies of a number of early published medical works. Each week the library publishes a current list of medical literature, a periodical index of great value to medical research workers. Plans for a new Army Medical Library and Museum building, to be located on Capitol Hill near the Library of Congress, are now under way.

MEASURING PERSONALITY

Though we by no means concede that you can analyze a person's character and personality by looking at him, we must admit that recent studies have gone a long way toward convincing us that there is a certain relationship between body build and personality traits. A report by Dr. Carl C. Seltzer in *Psychosomatic Medicine*, describing the results of studies of Harvard undergraduates, tends to indicate a specific correlation between body disproportions and personality.

The disproportions which Dr. Seltzer and his coworkers considered were: stature tall for body weight, shoulders broad for circumference of chest, chest narrow for width of shoulders, chest shallow for width of shoulders, hips broad for width of shoulders, head large for size of chest, chest small for stature, leg circumference small for width of shoulders, face broad for width of chest, hands large for body weight and hips broad for width of chest. They found that young men possessing these particular bodily disproportions are likely to have dominant personality traits indicating less stability, less integration, greater sensitivity and complexity of personality and less capacity for making easy social adjustments.

In the other direction, says Dr. Seltzer, people who are "sound," stable, integrated, vital and possess strength of personality have fewer body disproportions than the group average.

Though, as Dr. Seltzer points out, this study is by no means conclusive, the possibilities it opens up are interesting indeed. Maybe some day we can dispense with psychologic tests entirely and be able to sum up a person's personality and capabilities with a tape measure.

IMPORTANCE OF WATER

Relationship between water consumption and constipation seems to be definitely established at last. In observations extending over a twenty year period, constipated patients at the Oakland Health Center (later the Alameda County Institutions' Clinics) were instructed to cease taking enemas, laxatives and cathartics and to drink two or more glasses of cold or hot water with each meal, regardless of the other beverages that were consumed with the meal. Patients with severe constipation were told to drink a glass of water before breakfast and to take an enema if four or five days elapsed without a bowel movement. Of a total of 477 patients studied, 345 drank water with their meals, took no laxatives or cathartics and were untroubled by constipation. Among those 345 patients, 256 had formerly been troubled with constipation and had tried many remedies for it. Dr. J. A. McKerney, who reported the results of these studies in the *American Journal of Digestive Diseases*, attributes the cure of these patients to the generous consumption of water with their meals.

MANY HAPPY RETURNS

The homecoming of any veteran makes at least five or ten people happy, but the announcement of a doctor's return to his practice is good news to dozens of people, says Harlan Miller in the Des Moines Register. Even though we're living longer, we seem to go right on having bodily ailments, and we'll probably never have enough doctors to take care of them.